# Calculating Corruption: Political Competition and Bribery under Authoritarianism

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ABSTRACT

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Why do some authoritarian regimes exhibit high levels of corruption, while others produce very little? In this study, I show how corruption is used as a signal of performance and loyalty in autocratic regimes. I find that elites in non-democratic regimes reduce corruption in the face of political competitiveness. I test this theory using extensive micro-level data on the public's experiences with bribery in contemporary Russia. This data set is comprised of over 180,000 responses to public opinion surveys from 2001-2016 in Russia's subnational units. Identification of the causal effect of political competition on corruption is achieved with the use of an exogenously-determined electoral calendar—I show how the scheduled end of a term in office is an exogenous positive shock to political competition for authoritarian leaders in Russian regions, a shock that decreases experienced bribery by over 13% in those years. A wide array of alternative measures including novel search engine data and crime statistics support my conclusions. I also show that governors' tenuous hold on their positions—all the more tenuous when in their final years of a term in office—can be bolstered by additional resources that may be at their disposal. By showing how shocks to political competition drive governors to reduce corruption levels for fear of losing their jobs, but also that those shocks have varying effects for different governors, I illustrate the power of a dissatisfied public and authoritarian formal rules to shape behavior in non-democratic regimes. I also examine the linking assumption between public dissatisfaction and corruption experiences. These findings have implications for our understanding of autocratic politics,

corruption, and studies of Russia. I show that corruption in authoritarian regimes is not a byproduct of authoritarianism, nor is it merely a result of low capacity—it is also a means of rule and control for autocrats. Modern authoritarian rulers are more discriminating in their application of petty corruption than is commonly understood. Finally, I employ and extend multilevel regression and poststratification (MRP) to generate descriptive estimates of corruption as experienced by the public with much greater accuracy and precision than has been possible previously.

# Contents

# List of Figures

# List of Tables

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# 1 | Introduction

> The Eskimos have thirty words for describing different kinds of snow, and modern Russian has about the same number of expressions to describe giving a bribe to a state official.
>
> —Viktor Pelevin

Since the taking of bribes first became illegal in the Russian Empire under Peter the Great in 1715 to the arrest of Nikita Belykh, governor of Kirov oblast, in Russia in 2016, the fight against corruption has been a motif in these Eurasian lands. Russia is no outlier, of course—from Tammany Hall's "walking around money" to Peruvian President Fujimori's painstaking bribery contracts,[1] corruption often seems to be a unfortunate constant in modern society. Officials' greed for ill-gotten gains may be rather self-explanatory, but the reasons behind the vast variation in how dominant it is over time and space remain unclear.

In this dissertation, I study authoritarian political competitiveness and how it explains variation in petty corruption across subnational units of contemporary Russia. I find that

[1] See McMillan and Zoido 2004 for details on this fascinating look into systematic corruption. Echoes can be found in documents uncovered in early 2016 regarding Ukrainian President Yanukovych's political party dealings.

governors reduce corruption in the last year of their scheduled term in office relative to other years in office. Thus, the political competitiveness that is induced by the end of a governor's term in office yields lower levels of petty corruption. My findings show that petty corruption is affected by authoritarian institutions and the incentives they generate for regime actors—that corruption has a systematic, political component that has not heretofore been sufficiently explored.[2] Governors, as agents of the central autocrat, react to increased political competitiveness in the last year of their terms in office by reducing corruption levels. This helps them maintain the public's satisfaction and quiescence, thus improving the probability that the autocrat will choose to reappoint them.

By measuring petty corruption directly and linking levels of petty corruption to the appointment calendars of Russian governors directly, I help build a more complete picture of how institutions help keep authoritarian regimes stable. A wide array of accounts in comparative politics and other fields elucidate the roles of authoritarian legislatures, parties, welfare states, and coercive apparatuses in ensuring autocratic rule (Reuter and Robertson 2012; Magaloni 2006; Gandhi 2008; Blaydes 2010; Haber 2007). However, their considerable utility is limited by their static, functionalist nature. In this study, I add to these literatures by showing that formal, dynamic institutions like electoral and appointment calendars drive changes in political competitiveness in authoritarian regimes. This competitiveness, in concert with the public 'bad' of bribery, alters the calculus of principals and agents in an authoritarian regime. As a result, I show how competitiveness and corruption link three important components of the state and its stability.

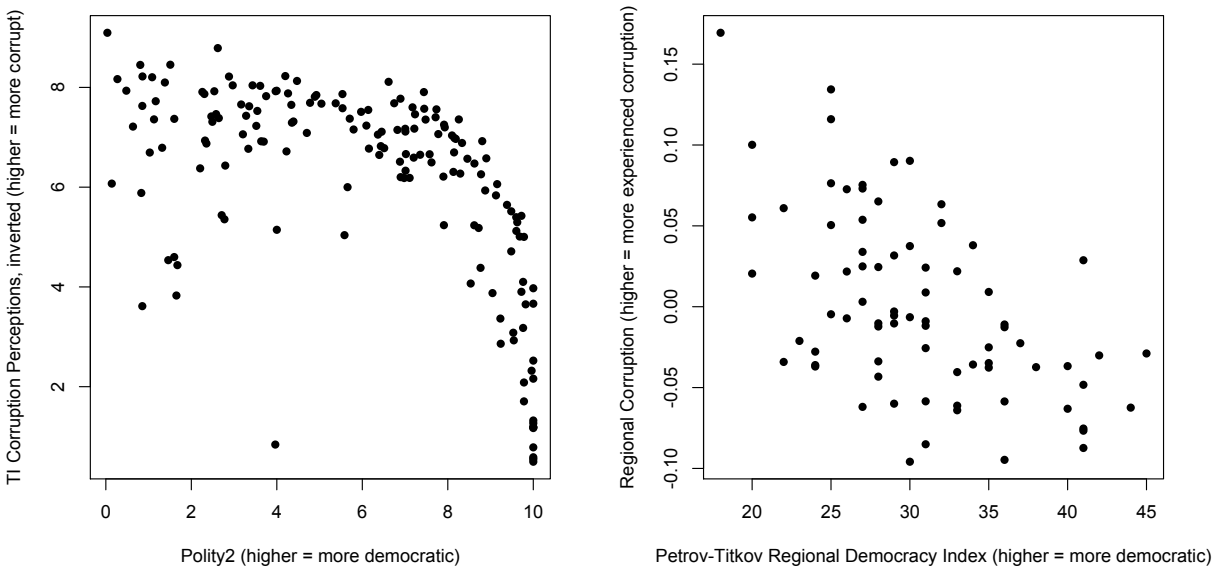
[2]As discussed later, Keith Darden describes a compelling way that corruption can be systematic in countries with low state capacity, but I describe a greater role for intra-regime incentives and politics than he does (2008).

Three assumptions underlie my account of corruption's role in authoritarian politics. First, corruption plays an important role in shaping the public's attitudes towards the regime. Everyday bribery is an extremely visible and undesirable public 'good' that can easily harm the public's perceptions of the government. Second, political competitiveness increases regime agents' concerns about job security in their tenuous-but-lucrative positions. Finally, the aforementioned risk of public discontent and agents' fear of losing their positions are built into the autocrat's calculus for staying in power. The autocrat's ever-present need to maintain control of sprawling social and political structures means that corruption can be used as a way of monitoring the performance of his agents.

Why delve into the role of political incentives when explaining corruption variation in authoritarian regimes? After all, a large body of research in many fields of social science finds striking differences in corruption between democracies and autocracies (Adsera, Boix, and Payne 2003; Olken 2005; Montinola and Jackman 2002; Olken and Barron 2007). We know much less, however, about what is behind the variation in corruption *within* autocracies (Dininio and Orttung 2004; Montinola and Jackman 2002; Duvanova 2007; Sharafutdinova 2012; Yadav and Mukherjee 2016). It remains largely unexplained why, in the absence of democratic institutions, some autocratic states exhibit relatively little graft while others are replete with it. This omission is all the more troubling since corruption is often so pervasive in these non-democratic contexts (Shleifer and Vishny 1993).

We are scarcely further in understanding where corruption comes from in autocracies despite scholars having devoted increasing attention to various types of autocratic rule and to variation in policy outcomes under autocracy (Magaloni 2006; Gandhi and Przeworski

**Figure 1.1:** Democracy, Authoritarianism, and Corruption




Left figure shows cross-national data, with country average (1990-2012) Polity2 score on the x axis and Transparency International Corruption Perceptions Index on the y axis. Right figure shows variation across Russia's subnational units, with Petrov-Titkov democracy score (for 2006) on the x axis and the region random effect from a multilevel model on pooled (2001-2016) survey data.

2006; Frye, Reuter, and Szakonyi 2014; Egorov, Guriev, and Sonin 2009). As one can see in Figure 1.1, there is substantial variation in levels of corruption even within authoritarian regimes, both across countries and within one electoral authoritarian country, Russia. The left panel of Figure 1.1 shows that cross-national variation in corruption, measured by the Transparency International (TI) Corruption Perceptions Index (CPI), varies greatly even between countries in the less-democratic half of the Polity2 scale. We can gain a clearer view of this variation in the right panel, which shows a gulf in corruption experiences between subnational units in Russia.

Beyond empirical investigation, there exists little *theory* for why a phenomenon like

petty corruption is found much more often in some authoritarian systems than in others. In particular, many existing typologies of varieties of corruption (e.g. Shleifer and Vishny 1993; Rose-Ackerman 1999) are silent about the characteristics of the political system that are driving this observed variation. Corruption is often taken to be a consequence of low state capacity or lack of control over lower-level agents (Markus 2012). Empirical studies (e.g. Adsera, Boix, and Payne 2003) generally only distinguish between democracies and autocracies, or use coarse typologies of regime type (e.g. Chang and Golden 2010). Other studies focus on specific mechanisms for control of corruption like the free media and politician accountability, which, while certainly important (and playing a role in my argument as well), do not satisfactorily explain the wide variation in corruption prevalence that we see in authoritarian countries.

Still other scholars offer assessments of political competition or selectorate size, tying these to perceived corruption levels (Montinola and Jackman 2002) or to leaders' time horizons. In this telling, the shortening of leaders' time horizons is likely to lead merely to a 'roving bandit' situation in which regime insiders simply steal all of the resources they can before their time in power comes to an end (Olson 1993). The proposed solutions, then, center around external constraints on leaders while they are in office rather than (or in addition to) limiting their time horizons. These constraints may take the form of voter accountability mechanisms or institutionalization of regime hierarchies. For example, ideologically-based institutional constraints or dissemination of information about corruption have been shown to restrain corruption in some forms and in some settings (Ferraz and Finan 2008; Hollyer and Wantchekon 2012). And yet, these constraints are frequently highly context-dependent and endogenous to political conditions.

One notable shortcoming of such explanations is their functionalist nature. This means that it is assumed that an institution is available and effective if an autocrat should choose to introduce it. It is worth pointing out, however, that such availability and effectiveness should not be taken for granted. What is more, reliance on the autocrat to *desire to* and *have the ability to* construct a political party, functioning legislature, or anti-corruption bureau introduces endogeneity to this relationship. This endogeneity is difficult to surmount and calls into question our ability to assess the exogenous cause of changes to competition, corruption, selectorate, or longevity in office. The approach employed in the present study alleviates these concerns by introducing a plausibly-exogenous change in political competition.

So, while accountability mechanisms within non-democracies operate poorly or are absent, we see some non-democracies suffering from extreme levels of petty and high-level corruption alongside non-democracies that have managed to minimize corruption.[3] Why is that the case? In this study, I analyze a range of data from Russia to show that governors reduce corruption when political competition is high—in the last year of their scheduled term in office—in the hopes of increasing their chances being reappointed by the autocrat. In doing so, I show that corruption is controlled by autocrats in a calculated way, since it provides useful information about the performance of agents of the autocrat. I contribute

[3]This dissertation focuses on petty corruption. As discussed in Chapter 8, I believe that my theory applies well to grand corruption in addition to petty corruption. One theoretical consideration and one empirical consideration drive my focus on street-level corruption. First, petty corruption is directly related to protest and public discontent—a dominant threat to autocratic regime stability. Grand corruption is certainly the object of 'sociotropic' beliefs about leader quality, as explored by Tucker and Klasnja (2013), but the path is less direct than with petty corruption. As concerns empirics, naturally grand corruption is much more difficult to obtain reliable data on. Expert surveys and public opinion surveys are likely to suffer bias and measurement problems.

to our understanding of corruption under authoritarianism and to study of the institutions underlying autocracy by showing how political competition incentivizes governors to reduce corruption in autocratic regimes at the subnational level. I test my theory with extensive new micro-level data and an exogenous appointment calendar.[4] When political competition rises, as at the end of governors' terms in office, agents limit corruption for fear of not being reappointed by the autocrat. In other years, governors can use petty corruption rents to provide benefits for their allies within the state.

The research design I employ in this study allows me to exploit variation across the more than 80 regions of Putin-era Russia from 2001 to 2016 in exploring the determinants of authoritarian petty corruption.[5] Using extensive micro-level data on personal experiences with bribery, this project focuses on corruption as the public encounters it every day. I address concerns of social desirability bias in several ways, including by incorporating evidence from list experiments. By examining variation in the corruption employed by these 'petite autocrats' across Putin's Russia, I am also able to hold constant legal system and national political factors.[6] Survey data from 16 surveys over a nearly 15-year period allows me to build a comprehensive picture of how political competition drives down levels of corruption

[4]A small portion of this period of study featured direct elections of governors, another portion—appointment by the president, and yet a third—'managed' elections approximating appointments. The dominant dynamic in my theory and data is on appointment of Russian governors.

[5]The regions of Russia, also called subnational units or 'federal subjects,' gradually decreased in the 2000s with the merger of several regions. The list of de facto regions expanded in 2014 with the addition of Crimea and Sevastopol, neither of which are included in any analysis in this study due to data unavailability.

[6]I will generally refer to the leaders of regional executives in Russia as governors, though their exact titles vary. More abstractly, I may refer to them as 'petite autocrats' or 'agents of the autocrat.' I also generally refer to these individuals using masculine pronouns, since the vast majority of Russian governors (and, indeed, of authoritarian leaders throughout the world) are male.

in non-democracies.

The argument outlined in this dissertation breaks with existing accounts that emphasize *types* of institutions that decrease corruption. Without a doubt, democratic institutions that create strong ties of accountability between the prey—the public, business—and potential predators—officials working in the state—rein in those actors and reduce the venality they can exhibit (Ferraz and Finan 2011; Montinola and Jackman 2002; see also Frye and Shleifer 1996 on the grabbing hand of the state). So too will a professional, tightly-controlled bureaucracy be more effective at eliminating graft than a politicized or low-capacity one (Rose-Ackerman 1999). I argue, however, that the fact that corruption, working via the public's negative reactions, can help describe the job performance of regime actors means that even when democratic institutions are absent and capacity is held constant, authoritarian regime features will limit corruption in some contexts much more than in others.

A further contribution of this study is the introduction of plausibly-exogenous variation in the institutions incentivizing officials to engage or abstain from corruption. The plausibly exogenous variation in political competition in this study is generated by the scheduled ends of terms in office of governors of Russian regions. Since the calendar governing these terms in office was exogenously determined in the 1990s, there is no concern that corruption levels may influence political competition as it is defined here. This, along with multilevel regressions that incorporate a bevy of region-year covariates, allows me to causally identify the effect of competition on bribery much more confidently than has previously been feasible. I find that when governors are facing the end of their term, they must mobilize electoral machines, fend off elite competition, and generally please their principal back in Moscow. Corruption decreases in these regions as a result—by over 13% in a single year, and even

more in already uncompetitive regions.

In addition to describing the effects of plausibly-exogenous rules on corruption, I move beyond descriptions of corruption variation that focus on governance outcomes. I demonstrate that political competition decreases corruption even in authoritarian contexts where the traditional drivers of good governance such as accountability and a free press are absent or weak. Corruption offers authoritarian leaders a convenient way to motivate and control the state without giving officials a dangerous amount of autonomy and while keeping them complicit in regime politics. However, petite autocrats (in this case, governors of Russian regions) constrain their own corruption when their grasp on politics is weak. Faced with a competitive arena and the attendant possibility of losing his power, a risk-averse petite autocrat has strong motivations to sacrifice the use of corruption as a political lever. An important implication of my findings is that corruption and the public's discontent over corruption levels are used by the autocrat as information about governor performance. Authoritarian regimes are generally quite information-poor (Magaloni 2006), but the role that corruption can play in informing the central autocrat about the performance and loyalty of his agents has been neglected in previous accounts of authoritarian politics.

In Russia, a competitive authoritarian regime that has been undergoing gradual centralization of power since Putin took office in 2000, regional governors have had varying amounts of success at building stable, effective electoral machines (Reuter and Robertson 2012). My theory demonstrates why, when governors act as effective regime agents by keeping stable control over their regions, Putin has been willing to allow corruption—spoils to keep those governors happy and co-opted. Governors in autocracies like Russia face a dilemma with regards to their job security. They are compelled to use petty corruption to reward

themselves and their supporters within the regime, but excessively high levels of corruption may provoke the anger of the president, who will be less likely to reappoint them to office. So the deleterious effects of corruption on a governor's popularity or on the restiveness of the regional public makes it less likely that the governor will be reappointed. Governors are acutely aware of this dilemma, and so they react to times of high political competitiveness—times when they are most likely to be removed from office by the autocrat—by reducing corruption levels. The final year of their scheduled term in office is when scrutiny by the president is highest. It is in these years that political competition is most worrying to governors, so it is then that they are strongly incentivized to reduce corruption in the hopes of keeping their jobs.

This research contributes to the study of comparative politics more broadly by showing how authoritarian institutions and formal rules affect a prominent 'public bad'—corruption (Hollyer and Wantchekon 2012; Polishchuk and Syunyaev 2015; Markus 2012; Yadav and Mukherjee 2016). I show that corruption is both a highly useful carrot and a stick in many authoritarian regimes, but that ultimately its use by autocratic actors like Russia's governors is constrained by regime exigencies and competitive threats. Such threats notably include changes to competitiveness driven by an often-overlooked formal institution—the political calendar. This plausibly-exogenous institution is not determined by the autocrat himself, so gives a view into how institutions under autocracy affect outcomes. What is more, it does so while avoiding the functionalist aspect of many arguments about, for example, authoritarian legislatures and parties, which are often highly endogenous and make causal inference difficult.

This study also contributes to literatures on corruption by advancing measurement:

I present large, over-time survey measures of experienced corruption, as well as list experiments and multilevel regressions (Treisman 2007; Rose and Mishler 2010).[7] A survey-based, micro-level foundation allows me to assess corruption with more precision and more breadth than what is allowed by subjective or observational measures. The multilevel model research design within one country, combined with a plausibly exogenous measure of political competition—the shock to the probability of losing office that is associated with the last year of a governor's term in office—allows me to hold constant and control for a large number of possible sources of heterogeneity. In addition to conducting inference, I also contribute methodologically to the measurement of corruption by introducing a descriptive, predictive method. Multilevel modeling with poststratification (MRP) allows for more precise estimation of aggregate experienced petty corruption levels, including estimation at subnational and other group levels not usually feasible, than do traditional survey or perceptions techniques.

Finally, I contribute to studies of modern Russian politics and patterns of corruption in post-Soviet Russia (Dininio and Orttung 2012; Holmes 2012; Libman and Obydenkova 2015; Reisinger, Zaloznaya, and Claypool n.d.; Sharafutdinova 2010). I show that, even in the face of the centralized 'vertical of power' constructed under President Putin, political competition and other regional political conditions drive substantial variation in corruption across Russia. Corruption in Russia is not merely the byproduct of venal, freelancing bureaucrats out for as much as they can steal. Nor is it the result of a uniformly weak state that may wish to rein in those bureaucrats but is unable to. Rather, political incentives and regime stability drive the behavior of autocrat and governor alike, who target a level of corruption that threads the needle of allowing them to enrich themselves and their sup-

[7]Measurement of corruption using surveys and observational data is fully explored in Chapter 3.

porters without 'overgrazing' a public that is wary of being taken advantage of. This helps us understand many of the dynamics we observe in Russia today: replacement of governors and other officials for abuse of office; the roles of performance and loyalty in uncovering how Putin judges his 'viziers'; and how the Putin regime has reacted to public discontent such as was observed nation-wide in the so-called 'snow revolution' of 2011 and 2012.

This study joins a number of existing studies that test theories of authoritarian politics at the subnational level (see, for example, Reuter and Robertson 2012, Sharafutdinova 2010, and Reuter and Buckley 2015 on Russia, Zhang et al. 2004 on China). By examining variation across the Russian Federation's constituent regions, I take advantage of a common legal-institutional framework, holding constant national-level political and economic trends, language, culture, and legacies of communism, while making full use of the variation in the political competition in regional political regimes. I also examine an understudied dimension of political corruption—petty bribery as experienced by the general public.[8] Petty corruption is no less important than 'grand' corruption or corruption among economic actors but receives relatively little attention. After all, it touches the public directly, a public that is transformed into a mere source of rent extraction for a venal government apparatus. Petty bribery lends itself to measurement more readily than grand corruption, which, combined with the fact that grand and petty corruption are often highly correlated, makes learning about petty corruption a powerful way to learn about grand corruption as well.

[8]Relatively little research uses individual-level data on corruption. In a recent working paper, Reisinger, Zaloznaya, and Claypool (2016) focus on the *effects* of small-scale corruption on support for the regime. They find that having experienced petty bribery lowers individuals' opinion of the regime's performance and thereby degrades their support for the regime. Others exploit micro-level evidence of *firms'* experiences with informal payments.

## 1.1 Defining Corruption

In this thesis, I generally define corruption quite simply—as small bribes given by citizens to state officials. This fits with a common definition of corruption, described by Shleifer and Vishny as "the sale by government officials of government property for personal gain" (1993). I restrict this study to monetary exchanges between private citizens and officials in order to focus on the reason that corruption and political competition can pose such a threat to autocrats: a public that experiences excessive corruption can easily become so unhappy with the regime that they take to the streets or otherwise abandon the acquiescence required of them.

I understand corruption differently from many studies focusing on grand corruption, as the petty corruption in this dissertation can reach down through all levels of the state from street-level officials up to high-ranking officials who benefit from 'bundled' petty bribes. Certainly this snapshot of one type of corruption somewhat limits the scope of the argument. It could be that, with another type of corruption such as grand corruption, bribe-givers are so invested in the regime that they enter into principal-agent relationships directly—no longer merely victims of extortion, but participants in state capture (Frye and Shleifer 1996; Hellman, Jones, and Kaufmann 2003). This is not the case with petty corruption, where there is no sense in which bribe-givers receive benefits or a stake in politics. Political competition could also have different effects on grand corruption than the amelioratory effect on petty corruption I describe here. For example, political competition might prompt the autocrat to pursue a few titanic sources of rents in place of street-level bribes, thus increasing grand corruption while reducing the petty. This too is beyond the scope of this study. I believe the

theory and argument laid out in the following chapters transfers exceedingly well to other contexts and, indeed, other types of corruption, but testing of these propositions must await further research.

## 1.2 Why Study Petty Corruption?

Why focus on corruption, and why on petty bribery in particular? Petty corruption is both positively and normatively important. Average citizens have dealings with the state in only a circumscribed set of ways. The identity, motivations, and behaviors of the state actors they interact with vary accordingly, as does the distribution of 'benefits' from the relationship. For the most part, these interactions are with low-level bureaucrats.[9] Everyday life may bring citizens in contact with the police, with postal workers, and with the functionaries who issue the documents that keep modern bureaucratic societies ticking. All of these low-level state actors are in their own way bureaucrats, working as they are within hierarchical, rationalized structures of authority and control. I primarily focus here on the stereotypical final variety of state bureaucrat—the license-issuer, the stamp-wielder, the permission-giver.[10]

Far from being truly petty, petty corruption is a relatively neglected phenomenon

[9]In this project, I conceptualize 'bribery' as *extortive* corruption. Here, as opposed to with what might be termed 'collusive' bribery, the official is exerting power over the bribing individual, extracting private rents under cover of his role as representative of the state. Most petty corruption in Russia is of this type—a small payment that is effectively required to get mundane tasks done. Future work will explore this distinction, especially in as far as it is related to larger bribes from firms or bribes given by very wealthy individuals who may be paying for a service that is *only* possible via shady proceedings.

[10]That this role overlaps substantially with the regulatory barriers faced by economic actors (firms) is also useful in this project, though I do not engage deeply with firm corruption in the present form of this study. See Frye 2004 and Frye and Shleifer 1996 for a look at factors that affect the stability of firms' property rights vis-a-vis the state.

that deserves closer scrutiny for several reasons. First and foremost, petty corruption is the corruption that the public experiences and suffers from every day. Such bribery—unlike grand corruption—persists in the public consciousness whether or not the press or civil society organizations are at work bringing cases to light. As such, how (and how much) the public experiences petty corruption can shape attitudes towards the regime, individual political actors, or the political system in general (Harmel and Yeh 2011; Klasnja and Tucker 2013; Kostadinova 2009). As a sort of public 'bad,' It is an important yardstick by which citizens can judge the work of the state and their political leaders.

Second, petty corruption is very likely to be highly correlated with grand corruption, a phenomenon that is much harder to measure and with more diverse theoretical import (Rose-Ackerman 1999; Jain 2001). So assessing variation in petty corruption across authoritarian regime types can improve our grasp of the prevalence of corruption as a whole. Third, petty corruption is intertwined with the broad operation of the state, bureaucracies, and a where-the-tires-hit-the-road nexus of political regime, the state, and the public. This is not necessarily the case with grand corruption. Large-scale bribery is largely the product of shadowy recesses where money and political resources meet, recesses that exist to varying degrees in any political system and can be taken advantage of by sufficiently unscrupulous (and powerful) officials given any small opportunity. Petty corruption, in contrast, is derived from the interactions of political regime type with both state apparatuses and with the mass public. This is more visible and more pervasive.

It should not be forgotten that low-level bribery is *normatively* undesirable and of real impact for the individuals giving and receiving the bribes.[11] What is a rough estimate

[11]Barr Serra (2009) incisively points out that petty corruption is also harmful in that it hurts those

of the aggregate volumes of corruption rents that are at work?[12] Looking at the importance of regime competitiveness in driving the prevalence of bribery, moving from a minimally competitive to a maximally competitive regime, ceteris paribus and for a region of median population (about 1,220,000 in 2010), we arrive at a figure of 88,705 excess bribes. This translates to—as a very approximate estimate and likely an understatement—an extra $8,631,014 in petty corruption in one region alone. These are large sums of money.

## 1.3 Why Russia?

While the theory that I develop and test in the following chapters of this study applies to a wide variety of countries and contexts, Russia is an exceedingly valuable setting in which to test it. Russia offers an ideal case for studying the effects of political competition on corruption within authoritarianism for at least three reasons: it features high levels of corruption with wide variation in its distribution, the subnational units of which the Russian Federation is composed exhibit markedly different types of regimes and varying levels of competitiveness, and yet, nevertheless, it is authoritarian through and through.

This project joins a large number of existing studies that test broadly-applicable theories at the subnational level and at the subnational level in Russia in particular (see, for example, Reuter and Robertson 2012, Sharafutdinova 2010, Reuter and Buckley 2015). By

who are too poor to pay the bribes that are demanded of them, thus generating a perverse sort of wealth inequality and pseudo-institutionalized state discrimination.

[12]Estimating the average monetary value of a bribe is, of course, very difficult. For one first glance, I use Transparency International/INDEM's survey-based figure of RUR2780 from 2005, or approximately $100. This is almost surely much lower than corresponding magnitudes in later years, as the Russian economy grew substantially in this period. I explore this to a greater extent in Chapter 3.

examining variation across the Russian Federation's constituent regions, I take advantage of a common legal-institutional framework, constant national-level political and economic trends, and consistency of survey data. I am able to hold all of these factors—language, culture, formal institutions, legacies of communism—constant to a great extent, while making full use of stark remaining variation in regional political regimes (see, for example, Figure 4.3 for a glimpse at the extent to which political competitiveness varies from region to region).

This dissertation also joins a bevy of studies addressing corruption in Russia and the Soviet Union in a wide array of time periods and employing diverse theoretical and empirical approaches. Valuable contributions include studies by Holmes (2006, 2006), who provides broad, encompassing discussions of the phenomenon and its dynamics, work by Libman and coauthors (Libman and Obydenkova 2013, 2015; Libman and Kozlov 2013) and methodologically-advanced research from Reisinger and coauthors (Reisinger, Zaloznaya, and Claypool n.d.), and many others. Ledeneva (1998, 2006) describes how corruption and related phenomena such as 'blat' (roughly speaking, connections) are used to build a coherent, stable system of non-democratic governance.

An empirical focus on one country, as this dissertation focuses on Russia, offers a number of advantages over cross-national approaches. First, it allows the research to hold broad historical legacies, political regime and rule, economic development, language and culture, and many other features constant—features which are doubtless highly endogenous to corruption and competition. One needs not worry about how to equivalently translate 'bribe' into various languages or how a corruption scandal linked to one national leader but not another may skew survey responses. Second, a subnational focus improves the consistency and availability of data, most of which can come from a constant source (one polling firm or

the national statistics bureau, for example) no matter the region. Finally, careful quantitative data collection can be transparently and robustly tied to deep qualitative knowledge of politics and society in one country. While there is much to be learned from comparing countries, a researcher must be certain to apply equivalent contextual cues and case knowledge between countries that he or she may be more or less familiar with. Examining variation within one country over time and across subnational units allays these concerns by zeroing in on a common context.

## 1.4 Plan of the Dissertation

In the next chapter, I lay out a theory of how political competitiveness drives agents in authoritarian regimes—in this case governors who are afraid of being punished by a performance-conscious autocrat—to reduce the volume of bribes they extract from the population. I also describe how my argument contributes to existing theoretical and empirical perspectives on corruption. In Chapter 3, I dive further into the empirical difficulties inherent in studying a topic like corruption while outlining my approach to the problem and presenting the data sets I employ. My main empirical results are presented in Chapter 4. I describe my research design and provide the results from regression analyses, including supplementary tests of the robustness of my results. Chapter 5 builds on these results by exploring the conditional effects that arise from my theory.

Moving beyond the relationship between political competitiveness and corruption levels, in Chapter 6 I test a fundamental assumption of my theory: I show that the threat of losing office due to public dissatisfaction is a valid underlying concern for Russian governors. I do this by showing that even in an authoritarian regime where corruption is common, the

public's reactions to corruption experiences are negative and potentially consequential for stability. A final extension using the corruption experiences data set is found in Chapter 7, which uses multilevel regression and poststratification to improve measurement of bribery. Chapter 8 concludes with discussion of theoretical, empirical, and policy-relevant implications of my findings.

# 2 | Theory: Corruption and Autocratic Stability

Я говорю всем открыто, что беру взятки, но чем взятки? Борзыми щенками. Это совсем иное дело.[a]

-Nikolai Gogol, *Dead Souls*

[a] I tell everyone openly, that I take bribes, but bribes in what? In borzoi puppies. That is an entirely different thing.

Staying in office is a prime concern for any political leader—all the more so for leaders who are not directly beholden to the public for their position. In this chapter, I present a simple theoretical framework that connects autocrats, governors, and the public using political competitiveness and job performance. This forms the basis for empirical testing of the theory—how competitiveness incentivizes leaders to reduce corruption in authoritarian regimes—in subsequent chapters. My argument is based on the assumption that governors maximize corruption rents conditional on remaining in power. One important way of staying

in power is to keep sociopolitical instability low in end of term years when the autocrat assesses their performance and replaces those whose efforts fall short. In other words, governors seek to maximize the corruption rents they can collect. They are constrained, however, by their need to maintain stability in their region. This stability is most at risk in end-of-term years, when the president assesses the performance and effectiveness of his agents, replacing those who fall short. It is this mechanism whereby governors 'tailor' corruption levels to ensure that the autocrat reappoints them that forms the heart of my theory.

In years when governors' fates are decided, governors reduce corruption to assuage public discontent and ensure that positive signals about his popularity and good performance reach the president. A stationary bandit, even one embedded in a competitive authoritarian regime, is first and foremost a bandit—a collector of corruption rents. In this context, his banditry is constrained by his principal. The central autocrat must not become so unhappy with the amount of corruption that his agent is engaging in so as to replace him. This limits the amount of corruption that the governor can safely engage in.[1]

[1]Similar dynamics should work in autocracies lacking these petite autocrats in the form of governors. There, public protest or dissatisfaction could weaken the central autocrat in the same way that it weakens Russian governors, only even more directly. In such cases the central autocrat cannot pass blame to his agents and so will be held responsible for corruption. Election years will present a focal point—a period of political competitiveness and contentiousness—for central autocrats just as it does for Russia's governors, a theme emphasized in a well-developed line of literature (Ross 2008, 2011; Bunce and Wolchik 2010; Teorell and Hadenius 2007) and exemplified in cases such as Georgia's "Rose Revolution" in 2003. Where they are able (and it is very reasonable to see President Shevardnadze in Georgia as lacking any of the capacity necessary), these autocrats will have the same incentive to rein in corruption in election years.

## 2.1 Existing Literature

What do we know from existing research about how corruption and political—especially authoritarian—institutions are interrelated? Recent scholarship has greatly advanced our understanding of the determinants of corruption. Perhaps the most prominent line of research shows how democratic institutions are able to limit corruption (Ferraz and Finan 2008; Dahlstrom et al. 2011; Dininio and Orttung 2004; Montinola and Jackman 2002; Olken 2005; Olken and Barron 2007; Shleifer and Vishny 1993). Indeed, several prominent studies include competition as an important variable affecting corruption prevalence (Chang and Golden 2010; Nyblade and Reed 2008). This research often addresses variation in electoral competition within democracies, or broadly compares how high political competition in democracies decreases corruption while the low political competition found in autocracies increases it (Bussell 2012; Dininio and Orttung 2004; Montinola and Jackman 2002; Ferraz and Finan 2008).

Another long line of research discusses the ways in which electoral institutions and formal institutions like presidentialism or proportional representation affect corruption (Persson, Tabellini, and Trebbi 2003; Kunicova and Rose-Ackerman 2005; Brown, Touchton, and Whitford 2011). I contribute to this literature by showing how such institutions can affect corruption even in non-democracies. In doing so, I join a small but important body of research that shows when and why public goods like low corruption may be provided by non-democratic leaders (Gehlbach and Keefer 2011). Polishchuk and Syunyaev (2015) provide a formal model and cross-national statistical evidence that the combination of elite turnover and elite asset ownership in non-democracies can produce an effect wherein rulers

work to maintain secure property rights even in the absence of democratic institutions. I echo their findings using micro-level data within a single non-democratic country. Perhaps surprisingly, this protection of property rights works not only at large scales of business investment and other economic outcomes, but is also observed in the experiences of those being ruled by those elites. This points to implications for how economic features like the security of property rights have direct connection to political regime characteristics, support for the regime, and life in the everyday public sphere.

Hollyer and Wantchekon (2012) give one explanation for why autocrats who are by definition unaccountable to the public would create binding institutions to fight corruption: anti-corruption institutions commit members of the regime to maintaining ideological integrity, rather than pursue narrow-minded patronage. This leaves unanswered questions about regimes that lack strong ideological content or that are underinstitutionalized and thus unable to enforce such commitments. I contribute to this vein of literature by focusing on the importance of authoritarian institutions themselves as constraints on the autocrat. What is more, a theory based on such institutional commitments assumes a greater level of ideologically-founded public support than is found in many autocratic systems, such as Russia's. Hale and others argue against the notion that Putin's Russia is driven by ideology in the sense that Hollyer and Wantchekon assume (2015). And, no less significantly, the theory presented by the authors would predict uniformly high levels of corruption in such regimes – where ideological support for the regime is very low. But here again, this leaves unexplained vast variation in observed corruption levels in such non-ideological autocratic contexts.

An alternative view might be that competition is unimportant in autocracies, that,

for example, as long as the public is not rising up to overthrow a failed autocrat or that a coup is staved off through force, authoritarian leaders' longevity in office is simply a matter of power or party. Magaloni (2006) describes authoritarian regimes where public support is purchased and elites are co-opted into stabilizing party institutions. The view I present here, however, is of competition constraining autocrats. Corruption is not just a way to build personal wealth or buy off judges, but also as a glue to keep the state politicized and under control. Elite pluralism or times of uncertainty such as scheduled ends of terms in office can jolt autocrats out of complaisance and limit how much they can rely on corruption in their regimes.

The themes I explore here are also engaged with by a variety of existing research. Gervasoni (2010) explains subnational regime type with fiscal inputs. Here, lack of political competition in subnational units can be explained by the nature of federal taxation and redistribution. Regions that exhibit 'rentierism,' analogous to the rentierism observed at the national level when state income comes not from robust taxation but from rent flow, have carte blanche to exploit their political power and limit dissent. Gervasoni does not directly discuss corruption, noting only that in rentierist, low-competition regions "if...incumbents can spend rents discretionally, they might use them to pay high salaries to many civil servants, award hefty procurement contracts, finance extensive clientelism, and dominate the media advertising market, all of which decrease the incentive for social actors to oppose the incumbent" (2010, 307). In this study I go beyond his focus on democracy by showing that corruption and other features besides rentierism do explain when and how regimes "restrict political competition and weaken institutional limitations on their power." (Gervasoni 2010, 303). In this way I contribute to resource- and rent-based macro explanations of regime

type: while this surely is important, this variation is not all top down but also about how the state is built and controlled.

McMann (2014) makes a significant contribution to the study of corruption in post-communist states. She argues, as I do, that accounts tying high levels of corruption to economic inefficiency or low state capacity are dangerously incomplete. She offers a compelling description of how a lack of market reforms in underdeveloped countries pushes the public to use petty corruption out of desperation and lack of institutional alternatives. This is perhaps intuitive for the Central Asian nations she considers. However, this cannot account for the high levels of petty corruption—nor, especially, for the variation in petty corruption—found in relatively developed Russia of the 2000s. Nor does her account engage deeply with political regime type or forms of authoritarianism. The framework she employs—supply and demand for particularistic benefits—is useful in considering individual-level dynamics, but Russian authoritarianism is in many ways different, more developed, and arguably more 'generalizable' than the form of authoritarianism she finds in Kazakhstan and Kyrgyzstan. I build a more general argument by capturing political competition as an important regime characteristic and take advantage of exogenous variation and new measurement strategies.

In another important, recent contribution, Yadav and Mukherjee (2016) argue that when businesses are able to join forces with oppositional elements within authoritarian institutions, they are able to lobby for and achieve low levels of corruption. I offer a contrasting view that focuses on the ways that authoritarian institutions themselves shape corruption. After all, business interests are only likely to receive traction within government when autocratic leaders are in fact receptive to their input. In addition, low levels of political competition in an authoritarian regime may limit the autonomy and ability to mobilize of small

and medium-sized enterprises, such that their bargaining capacity is in fact endogenous to deeper competitiveness. I build on the insight that businesses can take advantage of political competition to reduce corruption (Yadav and Mukherjee 2016) by showing how members of the political regime itself may be exogenously driven to limit graft and by bringing elements of economic-based logic back to the sphere of regime politics and the public.

To be sure, the idea that corruption can be an important means in addition to an end—indeed, that rents can be used as an incentivizing device for agents—is not new. Darden (2008) stresses that high-level corruption can function as an informal institution that can strengthen the state. In his account, such elite graft produces a poor foundation for democracy but can build a reasonably Weberian, well-functioning state. By serving as a substitute for professionalized state-building, corruption can actually increase overall state capacity. However, this overlooks how regime politics plays a role in determining corruption levels, and, at the same time, relies on low levels of state capacity that may be found in contexts like Ukraine but that do not apply to cases like modern Russia. In competitive authoritarian regimes, it is not just the broader state of employees and functionaries that needs to be managed and controlled, but also the ruling elite within the political regime. I extend the dynamics described by Darden (2008) by incorporating political competition, explicitly showing how it varies within an authoritarian polity, and what effects it has on corruption. Darden's (2008) description of corruption as an institution in many ways echoes Manion's (2004) depiction of corruption in China as an informal political system. While Manion focuses on the shared expectations of elites and masses that can stymie serious anti-corruption efforts, my contribution shows how autocratic institutions affect the to engage in anti-corruption fights in the first place.

A full review of the voluminous literature on corruption in political science, economics, public administration, and other fields is impossible to include here.[2] Several prominent studies include competition as an important variable affecting corruption prevalence (Chang and Golden 2010). They often address variation in electoral competition in democracies or the broad difference in the levels of political competition found in democracies, on the one hand, and in autocracies, in the other (Bussell 2012; Dininio and Orttung 2004; Montinola and Jackman 2002; Ferraz and Finan 2008). While this research frequently finds that the chasm in political competitiveness and accountability mechanisms between democracies and non-democracies plays a role in the differences in corruption prevalence that we also observe, these studies also fall prey to issues with measurement and difficulties in adequately managing cross-national variation of elites and masses.

In an important paper, Montinola and Jackman (2002) find a nonlinear relationship between political competition (as measured by selectorate size) and perceptions of corruption. They follow Rose-Ackerman (1978) in hypothesizing that competition between politicians or between bureaucrats will generally lower state corruption levels. Drugov (2010) expands on many of the ideas in the seminal paper by Shleifer and Vishny (1993) with a formal model that compares the 'monopoly regime' in India with the 'competition regime' in Russia, focusing on the ways that bureaucrat competition can affect the levels of bribery that firms face.

In work focusing on autocracies (or comparing autocracies with democracies), various mechanisms have been proposed to explain variation in perceived corruption levels. Do

[2]See, for example, reviews by Jain (2001), Lambsdorff (1999), or in Treisman (2000). Holmes (2012) and Kupatadze (2015) offer some recent overviews of corruption phenomena in post-Soviet Russia.

and Campante (2008) argue that, in autocracies, where the threat of revolution is real, greater concentration of the population around the policy making city increases the autocrat's incentive to suppress corruption and otherwise improve governance. Duvanova (2007) shows that—even in non-democracies with poor regulatory frameworks—firms may band together in business associations in order to shield themselves from capricious and arbitrary state extortion. A number of studies posit that regime time horizons are negatively associated with corruption prevalence (Chang and Golden 2010; Campante et al. 2009; Gamboa-Cavazos et al. 2007; Montinola and Jackman 2002; Sidorkin and Vorobyev 2015; also see Gandhi 2008 and Wright 2008).

Other research attributes corruption to the style of autocratic governance in a polity (Zaloznaya 2014), organizational hierarchies (Osipian 2010), norms and beliefs "about both the prevalence of corruption and the reliability of government as an enforcer of rules ostensibly constraining official venality" (Manion 2004), press freedom (e.g. Dahlstrom et al. 2011) or simply structural and state-based factors (Belousova et al. 2011; Dininio and Orttung 2004; Montinola and Jackman 2002). Finally, two studies find confirmation of the idea that autocrats seek to adjust corruption levels to fit imminent political realities, generating something like political business cycles of corruption (Sidorkin and Vorobyev 2015; Mironov and Zhuravskaya 2014).

## 2.2 Governors and Autocrats

I argue that governors constrain their own corruption in end-of-term years because they know that corruption—and the public's reaction to excessive corruption—is informative for the central autocrat about how good of a job his agent-governors are doing at keeping their

polities happy and stable. In addition, while corruption may not be the sole informational signal[3] about job performance, it is an important one for several reasons. It is a feature that is salient to crucial actors on whose support any regime ultimately depends—firms, the public, the media, and state agents. Just as importantly, corruption is nearly universally reviled by each of those actors and is thus much more likely to provoke protest than other notable 'public bads' such as dilapidated infrastructure. Corruption is fundamentally an active, negative sign of illegal and unscrupulous behavior that cannot be explained away as lack of effort.

The autocrat monitors the performance of governors, but this task is difficult given the thousands other appointed officials—envoys, ministers, judges, police chiefs, generals—that the president must monitor. In addition, the autocrat only views outcomes at the regional level, not the governor's effort. However, one way that the autocrat assesses performance is by keeping tabs on corruption levels in governors' jurisdictions. The assessments systems used by the Presidential Administration have been widely reported (see, for example, Polishchuk 2003 in Forbes Russia[4]). While their exact contents are unverified and change over time, elements like popularity of the governor, which is closely tracked with large public opinion surveys, and indicators of social stability such as protest are prominent, ever-present components.Crime statistics collected by his centralized monitoring apparatuses—the police, procuracy, and

[3]I use the term 'signal' somewhat informally. As discussed in other sections, autocrats can and do monitor corruption, potentially directly and via public opinion. This, plus the very visible 'signal' of street protest, forms the informational content that tells the autocrat how well a governor is doing at navigating the corruption dilemma I describe in this chapter.

[4]http://www.forbes.ru/mneniya-column/vertikal/245897-pochemu-kreml-vpustuyu-tratit\-dengi-na-razrabotku-kriteriev-otsenki-g

intelligence services[5]—are available to measure cases of abuse of office, bribe-taking, and even bribe-giving.[6] Corruption also fits closely into the various measures of public opinion and systems measuring the 'effectiveness' of regional governance used by federal officials. So 'police patrols' in the guise of formal monitoring efforts are crucial to assessing the performance and loyalty of a regime's agents (McCubbins and Schwartz 1984; see also Levi 1988). Bad press and outright public protest (which need not be in large numbers to be effective) work as a final 'fire alarm' that can alert Moscow of egregious violations of agents' implicit performance contracts.

A fundamental assumption underlying this theory is that, first and foremost, autocrats are concerned with staying in office, especially 'petite autocrats' like Russia's governors who are appointed by a central autocrat. In order to remain in the central autocrat's good favor, these governors especially must maintain stability and regime coherence in their regions. If corruption or other failings were to arouse protest or revolt among the public, their jobs could be at risk. This is especially the case when appointment and election calendars generate increased political competition and uncertainty. In these times such as ends of terms in office, governors have incentive to reduce corruption in order to ensure that the public, and therefore the central autocrat, is sufficiently satisfied with their job performance to leave them at the helm.

So, as 'petite autocrats,' subnational leaders like Russia's governors wish to remain

[5]These three structures, along with the military, compose the core of Russia's 'force structures.' They are under central, federal control, such that their operations in Russia's regions are the work of appointees and directives from Moscow.

[6]These crimes are established in Articles 285, 290, and 291, respectively, of the Federal Criminal Code of the Russian Federation.

in power above all else—being in office gives them the opportunities they need to extract wealth by operating as stationary bandits (see Olson 1993, Levi 1988). They function as stationary bandits while at the same time they are embedded within a set of principal-agent relationships: as agent of the central autocrat and as principal to their own officials and bureaucrats. In a competitive authoritarian regime like that of Putin's Russia, these principal-agent links are relatively uninstitutionalized by partisan or formal institutional structures.

While corruption is one of the main benefits that autocrats see from remaining in office, it also entails risks for autocrats, especially petite autocrats who are held responsible for local conditions. The foremost cost is the risk of public revolt in the face of overweening graft. There exist countless examples from all variety of regimes where citizens take to the streets to protest corruption in the political system, from the crowd that seized a police station in Armenia in July 2016 to the reported 10% of the electorate that demanded the prime minister's ouster in Iceland in April 2016. For an autocratic leader, this is embarrassing, at best, and can lead to a full-on uprising, at worst. Economic losses due to corruption are important as well. For a ruler wishing to extract wealth from an economy, corruption can be very costly if the inefficiencies it causes shrink the pie so far as to affect the ruler's own bottom line (Shleifer and Vishny 1993; Olson 1993). At the same time, governors need a certain amount of corruption rents in order to enrich themselves, and to co-opt their own agents in the region into remaining loyal. Governing may require the use of corruption to motivate and maintain the political machine that he needs.

### 2.2.1 Unpopularity and Unrest

Governors, like other less-prominent appointed officials, are assessed by the central government on their job performance. Among other aspects of their work, maintaining a good reputation in the eyes of the mass public is of utmost importance—the regime relies on quiescence and cooperation for stability and legitimacy. Petty corruption may reduce popularity, trust, and satisfaction with the authorities, as explored more deeply in Chapter 6. Since the autocrat is more likely in end of term years to pay attention to how well governors are performing at maintaining these the public mood, governors reduce petty corruption in those years in order to keep their popularity levels up.

In addition to overall popularity of a governor, the most extreme manifestation of unpopularity—active unrest—stands out as a 'fire alarm' that signals to the autocrat that corruption has reached impermissible levels.[7] The risk of protest and unrest in an authoritarian regime is very real indeed, a theme which I explore empirically in Chapter 6. Established and growing literatures in social mobilization and authoritarian stability show some of the techniques that non-democratic regimes use to stave off protest (Lorentzen 2013; Polese and Beachain 2011; Koesel and Bunce 2013; Reuter and Robertson 2015; Kricheli, Livne, and Magaloni 2011). In some contexts, even simple dissatisfaction in the public can be enough to prompt desperate action—anything to prevent revolutionary pressures.

Failures to keep discontent about corruption under control abound. In the so-called

[7]The concept of passive 'fire alarms' that can be used to monitor more cheaply than active 'police patrols' is due to the work of McCubbins and Schwartz (1984). A case of fire alarms failing to serve their purpose can be observed when public discontent suddenly—and subtly—reaches an unseen threshold. Kuran describes this situation as one where preference falsification obscures true public opinion, so discontent bursts onto the streets as protest or revolution (1991, 1997).

Rose Revolution of 2003 in Russia's next-door neighbor of Georgia, protest quickly and unexpectedly brought tensions over an ineffectual regime to a boil (Kukhianidze 2009; Papava 2006). President Shevardnadze was forced to resign and a sort of populist revolution swept Mikheil Saakashvili into power. In Russia, Robertson describes dynamics in Russia in the Yeltsin and Putin eras that belie the importance of protest and efforts by the regime to bring it to heel:

> ...[U]nder Putin the elite has become dramatically more cohesive, and regional leaders have had strong incentives to try to prevent protest from taking place. These incentives come from institutional changes made by the Putin administration, from elite perceptions that Putin's regime will be long-lived and from changes in the economic environment. The apparent elite unity has meant that, in the first Putin term in particular, levels of public protest have been very low compared to the Yeltsin era. (Robertson 2010, p. 8)

Stability is under question in restive regions that—in any year of a governor's term—feature contentious or competitive politics. For example, regions with an already-strong civil society, powerful contenders for power within the ruling party, or a populace particularly beset by economic difficulties are likely to more quickly boil over. In these situations too, a governor especially worries that his weak grip will lead to his being punished if the president observes negative signals from public dissatisfaction or disarray in elite ranks. So while competitiveness can come from a number of sources, including structural and social sources, the effect of heightened competitiveness is the same, as it constitutes a threat to the job security of the governor.

A governor in a high-competition context fears punishment by the central autocrat very acutely. His response is to be careful, reducing corruption in order to keep the central autocrat happy in this uncertain time of potential reckoning. High levels of political

competition, such as that found at the end of a governor's term in office, compel him to fight corruption among his agent-officials. When competition is low, for example in 'normal' years when the central autocrat is not paying especial attention as long as corruption is not glaringly beyond acceptable limits, the governor is relatively free to engage in corruption.

Of course, not all governors will be affected to the same degree by changes to the competitiveness around them. Governors are less constrained—and thus are less compelled to reduce corruption at the end of a term—when they have other resources available that can be used to placate the public and ensure the president is satisfied with their work. Features that ease the petite autocrat's task of building and controlling a political machine will reduce his need to use corruption in that role. So, conditional on the presence of such alternative resources, an increase in political competition is not so threatening to the autocrat's survival. Here, the autocrat-governor is relatively secure in his ability to satisfy the central autocrat with votes and stability, regardless of corruption.

What will ease the task of building and controlling a political machine? The presence of natural resources offers a simple source of rents that can substitute for corruption in such a way. Ethnic division—such as that found in many Russian 'titular republics' where the governor is by law or tradition a representative of the local non-Russian ethnicity—may also provide identity-based affinities and access to political networks that increase stability. Other features such as having a larger state, greater state capacity, stability in state cadres (i.e. low turnover), and simply a longer tenure in office will all similarly serve to improve stability and lessen the impact of competition on corruption levels. These resources can serve for governors as a bulwark against instability and insecurity in office. By providing additional sources of power, wealth, or support bases, they assist the governor in placating

a restive public and demonstrating competence to the autocrat.

Finally, petite autocrats in regions that have performed poorly in achieving regime goals like high pro-regime voter turnout in the past will have a particularly difficult task, since they face an even higher bar in terms of pleasing the president. The risk of 'overgrazing' by engaging in too much corruption looms large for these governors, so they tread even more lightly than those who have performed well in the past. Competition should even more substantially dampen corruption in these cases, since the risks of the governor being punished are compounded. In other words, there are features[8] of governors' political contexts and preexisting relationships with the autocrat and with the public that can mitigate or exacerbate the harm that end-of-term political competition shocks do to those governors' sense of how well they are doing at keeping the public happy.

## 2.3 Governors' Levers

In order for changes in political competitiveness to affect not only governors' calculus when deciding how much corruption to engage in but also the amount of corruption that is actually generated on the ground, governors must have some ability to change corruption levels. In other words, there must be the systematic, organized element to corruption that I posit in this study.[9] What levers do governors have to decrease corruption in their purviews

[8]These features are related to political competitiveness in that they may independently affect the probability with which a governor is reappointed, but they are not the same as competitiveness. Their relationship with competitiveness is likely complex and endogenous. Their relationship to the *effects of exogenous shocks to competitiveness*, however, is much less so. I am concerned with the latter, as it is difficult to disentangle the multiple possible causal arrows and overlapping measurement concerns with regard to the former.

[9]To be sure, governors are unlikely to have total control over corruption levels—there is a component of corruption that is random or determined by other, non-political factors. These other factors could

when political competition spikes? In this dissertation, I assume simply that governors do have the means to modify the behavior of their agents—the bureaucrats on the street who are engaging in corruption on a day-to-day basis. In other words, I draw on a theoretical assumption—supported by substantial qualitative and case evidence along with strong corroborating evidence in Chapter 5—that in authoritarian regimes like modern Russia there are myriad ways for regime actors to incentivize, disincentivize, and otherwise manage the corruption that their agents engage in.

First, governors can give powerful signals to bureaucrats that corruption is to be curtailed for a time. These signals could take the form of prominent arrests of a crooked official or two. As the criminal justice system in authoritarian regimes is often quite politicized, lacking real rule of law, it is quite trivial to find some insignificant low- or mid-level bureaucrats to make an example of. Alternatively, governors can explicitly signal displeasure with corruption by beginning loud, public anti-corruption campaigns that promise to enact harsher legal penalties for graft or employ extra prosecutorial effort. Publicly visible or merely internal to the bureaucratic apparatus, such signals can reach down through bureaucratic layers to make the clear point that the brakes should be applied, if only temporarily.

Second, the very hierarchical nature of modern state apparatuses means that often corruption is highly structured and deliberate. When 'chains of corruption' are used to co-opt regime officials from street-level to the top, such as in scenarios where rents are funneled upwards yet at every level an official takes a cut, the order to reduce corruption could essentially be just that—an explicit order. This could be accompanied by assurances that

include things like state capacity or press freedom that have been proposed in previous research. Nevertheless, the key to my argument is that a non-negligible amount of the petty corruption that the everyday public can be changed by governors' actions.

corruption can increase in compensation after competitive times have ended. It could also entail a shifting of resources, with the governor's personal gain deemphasized for a time in favor of others taking a larger cut of a smaller pie of corruption rents.

Finally, political competition intrinsically aligns the incentives of governors and many lower-level officials. Bureaucrats too see that a dissatisfied public is likely to prompt punishment of poor performers, so to ensure their own job and the job of the governor who employs them, cleaning up one's act is quite natural. Those bureaucrats whose fates are closely tied to the governor's fate, such as high-level political appointees who serve at the pleasure of the governor, will therefore have an incentive to reduce corruption regardless of any actions the governor may or may not take. Bureaucrats in the civil service, relatively more insulated from gubernatorial control, may feel pressures from politicized chains of corruption or heed signals about the need to reduce corruption more acutely than direct fears of losing their jobs if the governor is replaced.[10]

## 2.4 What Is Political Competitiveness?

Political competitiveness for an autocratic leader is the probability (or risk) of being replaced.[11] In authoritarian regimes without contested elections, appointment mechanisms

[10]This effect, alongside the others discussed here, will to some extent depend on bureaucrats' insulation from politics. More professionalized bureaucracies will be better able to buck the demands of the governor, if in fact their positions depend on the governor's assent. For the present research this must remain in the background, assumed to be constant from region to region.

[11]This means that, in electoral authoritarian regimes, political competitiveness is largely—though not completely—equivalent to electoral competitiveness, i.e. the risk of losing power to an electoral challenger. Even in such regimes, though, the lack of true democratic electoral accountability mechanisms means that there are other means by which a leader's position can be threatened. Replacement by coercive means or by a challenger within the dominant party, for example, remain features of political competitiveness that lie outside of electoral competitiveness.

dominate, meaning that the probability of being replaced in office is quite directly dependent on the vicissitudes of the autocrat. Actors like governors in modern Russia implicitly or explicitly assess the features that comprise political competitiveness in their milieu when attempting to judge the probability that they will be removed from office.

Much of this underlying mechanism of political competitiveness and the risk of losing office finds echoes in Hale's descriptions of patronal politics and regime cycles (2015). While here he discusses elections under hybrid authoritarianism, presidents, and term limits, none of which are precisely the rules at work in the present dissertation, nevertheless the logic is worth exploring at length:

> Elections, especially when combined with expectations of succession, turn out to be among the most important sources of regularity. ... [T]erm limits tend to generate at least some uncertainty as to the president?s staying in office beyond a certain point. Crucially, the uncertainty generated by term limits is likely to rise in combination with other reasons people might expect a president to go. Indeed, term limits facilitate the coordination of any suspicions appearing for other reasons that the president might depart office but that do not involve a concrete point in time at which the departure is expected (and expected to be expected by others). They do this by providing a precise temporal focal point around which dissatisfied networks can coordinate activity aimed at removing the leader and by potentially opening up greater possibilities for themselves to gain the top office one day. (Hale 2015, pp. 69-71)

As he emphasizes, one manifestation of political competitiveness is as important *periods of time* which "serve as focal points around which elites coordinate their expectations as to when precisely an unpopular, ill, aging, weary, or otherwise faltering president is most likely (a) to leave office voluntarily, (b) to be most vulnerable to ouster by other elites, and/or (c) to face other elites? attempts to oust him" (pg. 72). Beyond elections and term limits, Reuter and Robertson note that "appointment events are a natural time for changes to be made" (2012, p. 1028).

What are the features of a political arena that contribute to competitiveness? First is the presence of credible, strong challengers for office. In nearly every autocracy, and certainly in modern Russia's unconsolidated authoritarianism, an abundance of eager individuals seeking the power and wealth of a plum regime position may easily be found. The greater the political resources of those potential challengers, the more easily political primacy is contested.[12] While, as noted, rarely in short supply, these challengers from either within ruling party cadres or from opposition forces are often present in various measures due to historical legacies. One way to either prevent their appearance or to limit the threat they pose is to build a dominant political machine.

A strong political machine is one of the best tools available to an autocratic leader for reducing competitiveness. Where a leader lacks such a machine—loyal, capable regime agents, economic resources that can be used to co-opt, expertise in monitoring and managing insiders—the political arena goes relatively undominated and competitiveness rears its head.[13] Useful in appointment and electoral circumstances, a political machine helps a leader fight rivals and demonstrate good political performance.

Finally, political competition is shaped by institutions. As noted by numerous scholars in the last decade or so, the presence and strength of institutions such as political parties, legislatures, and civil society, as well as formal institutions like presidential or parliamentary structure, term limits, and the electoral/appointment calendar all affect the probability of

[12]Potential means of eliminating such challengers include violent, coercive removal and co-optation, as discussed by Haber (2006).

[13]A canonical example in modern Russia is the Republic of Tatarstan. First under Mintimer Shaimiev and then under his protege Rustam Minnikhanov, Tatarstan has for decades been dominated by a political machine both broad and deep.

being replaced in office (Svolik 2012; Magaloni 2006; Gandhi 2008). Rather than being mere window-dressing or symbols of legitimization, they contribute to regime durability by providing mechanisms for the distribution of benefits to supporters and cooptable opposition They can also serve as useful tools for regime stability by creating credible incentives or disincentives to move up in regime ranks,[14] constraining and channeling individuals' political aspirations into hierarchies, and by incentivizing or credibly committing elites to behave in the regime's interests (Magaloni 2006; Gehlbach and Keefer 2012). Finally, authoritarian institutions can also have a perverse effect for regime stability, as when they focus attention of elites and the public on particular turbulent times or on certain actors. Hale (2011) and others have shown how elections, for example, can serve as focal points for protest and even revolution. In this work, I show that neither the elections nor the appearance of street protest are necessary parts of this equation: political competitiveness, conceived of as simple scheduled ends of terms in office, can sufficiently impact public dissatisfaction with the regime to prompt the regime to reduce corruption levels.

## 2.5 Attention and Monitoring

An important consideration is why actors in an autocracy—autocrat and governors alike—reduce corruption only in times of high political competition, such as when the risk of losing office is high. Why can they not foresee changes to competitiveness or decide to 'play it safe' all the time? And why would the autocrat not threaten his agents with severe punishment all the time if he catches them performing poorly? I answer these questions by assuming that

[14]The modern Chinese system has been widely noted as being successfully structured by institutions like party hierarchy and age limits (Shih, Adolph, and Liu 2012; Nathan 2003).

a) corruption is too valuable for the governor and autocrat to limit too much and b) both the autocrat and the public have limited attention or ability to monitor the performance of governors.

I assume that corruption is a crucial 'grease' that helps authoritarian regimes function smoothly. It serves as a highly effective motivating tool for regime insiders, and a means of co-optation, leverage, and blackmail. Governors in particular are exceedingly interested in private enrichment, especially in a system where political power and economic power are very concentrated, as in many authoritarian states. They know that eliminating corruption is neither possible nor desirable, as it would rob them of much of their own power. This feeds into the dilemma facing governors in corrupt, authoritarian regimes. Going 'clean' is manifestly not an option, on the one hand, but nor can they cross the line into full kleptocracy[15] for risk of displeasing the public and autocrat.

Attention and monitoring capability are also in short supply, all the more so the larger the country ruled by the autocrat is. I assume that autocrat and public alike must ration their attention to indicators of performance that are visible and salient, that times of high political competitiveness also serve as focal points for attention, and that autocrats are indeed able to monitor public satisfaction and thus the performance of their agents. The president of any modern country of reasonable size, especially one with a relatively plural, complex federal-authoritarian regime like Russia's, has myriad issues constantly competing

[15]At least, they cannot cross the line into full kleptocracy when it comes to *petty* corruption that directly affects the public. That can only be done with the support of a very strong repressive apparatus that can ensure that the populace is sufficiently cowed. Such strong, coercive regimes are beyond the scope of this study, which is concerned with hybrid, competitive, unconsolidated, and non-totalitarian autocracies. See also Levi 1988.

for his attention.[16] The president maintains what often amounts to direct control over appointments of regional governors, super-regional presidential envoys, prosecutor generals, judicial positions, heads of police, military and security service posts, federal ministries, party leaders, and the over 1,500 employees of the presidential administration's 18 departments. This is in addition to state-run media, foreign affairs, defense, budgetary difficulties and all other day-to-day decision making that weighs heavily on the leader of a quite personalized regime. Governors are simply one set of cogs in regime machinery, cogs which cannot occupy the autocrat's constant attention. Thus, governors are particularly aware that an overworked autocrat, likely pushed towards micro-managing affairs as Putin increasingly appears to be and many insecure autocrats are, turns his judging gaze towards them only when important decisions are to be made.[17] Final years of governors' terms in office are prominent among those times.

[16]Note that delegation of this attention and authority to 'viziers' may temporarily alleviate the problem, but is no solution. As witnessed by President Putin's efforts since 2000—seemingly accelerating after 2011 with appointment of personal bodyguards to political positions, creation of a 'praetorian guard' in the National Guard in 2016, and frequent reports of isolation bordering on paranoia—the loyalty of such viziers is always under question. See Egorov and Sonin (2011) for insightful elucidation of such dynamics.

[17]A recent journalistic account by well-regarded news outlet *RBK* describes in general terms Putin's presidential administration has a staff hierarchy of officials working on 'the regions' and domestic politics. These officials are tasked with collecting and distilling information for delivery to the Kremlin. In fact, until recent changes under new First Vice-Head of the Presidential Administration Kirienko (a post that oversees domestic politics within the administration), there was a specific administration official in charge of managing regional elections and bringing important governorships to the president's attention. http://www.rbc.ru/politics/02/12/2016/58413ca89a79478f86bc097a?from=main (in Russian)

## 2.6 Selection Mechanisms in Russia

As the data in this study covers the years 2001 through 2016, it encompasses three periods of gubernatorial selection in Russia. In the first period, through 2004, governors were elected by the public. Beginning in 2005, the electoral system was replaced with an appointment scheme, wherein President Putin (and later President Medvedev) selected and appointed regional governors by hand. President Medvedev returned direct election of governors in 2012, albeit with very close control over candidacies by central authorities. In my theory, the mechanism by which political competition depresses corruption is through the central autocrat—his decisions about who to appoint and re-appoint. As such, I predict a strong effect in the second and third periods.[18]

While my theory does not explicitly predict how political competition will affect corruption when governors are elected (i.e., in the first period), I expect a similar effect for two reasons. First, to the extent that these elections are free and fair, the accountability mechanisms driving lower levels of corruption in democracies than in non-democracies cross-nationally should produce the same effects here (Dahlstrom et al. 2011; Montinola and Jackman 2002; Ferraz and Finan 2008; Chang and Golden 2010). In such cases, political competition may work much as it does in democracies, perhaps with significant manipulation of election outcomes (and thus dampening of accountability's effect) in the regime's favor. Second, to the extent that these elections are *not* free and fair, conducted as they are in a regime that is rapidly advancing its control over politics using a dominant party and other

[18]In the third, pseudo-electoral, period the selection of candidates is so highly controlled that, along with the dominance of the United Russia party, the effect is more one of appointment than true election.

methods (Reddaway and Orttung 2005), the regime's support for regional candidates for governor could give the president an element of control analogous to that of direct appointment. Here, then, authoritarian elections may produce dynamics broadly similar to those under authoritarian appointment schemes.

I further assume that the central autocrat is concerned with the stability of the regime that he heads. To maintain stability (and thus maintain power) he must evaluate the performance of his agents—in this case, the governors who have substantial power over Russia's far-flung federalized government. He always has the *de facto* ability to replace underperforming governors who, for example, are so dirty that they present a risk of social protest. But in as complex a system as Russia's, and as the personalization of decision making has been seen to grow of late, end of term years are critical focal points. Formal institutions like the electoral calendars establishing petite autocrats' terms in office exogenously introduce an element of competitiveness—a friction that heightens the importance of seeking out and, if necessary, punishing poor performance.

The central autocrat (in the case of Russia, the president) is most likely to punish underperforming governors at the end of their terms in office, so it is these years when governors feel the most pressure to reduce corruption. This focus on end-of-term years arises from two self-reinforcing assumptions. First, the task of monitoring all of Russia's more than 80 regions, each comprising its own complex political arena, is onerous. Monitoring may proceed apace at all times, but the autocrat's limited attention is drawn to critical moments like the scheduled end of a term in office. What is more, actively *reappointing* an extremely corrupt governor may dangerously redound on the autocrat—an unhappy public could blame the autocrat himself for supporting a governor they know to be poor-performing.

No such active role needs to be taken in non-end-of-term years, so the autocrat may pay less mind in these times and, in turn, governors feel relatively unconstrained to engage in corruption. This points to the second reason for a strong focus on end-of-term years. Replacing a governor outside of the established electoral/appointment calendar is a drastic move. While Russian presidents do this from time to time,[19] it may seem desperate or not in-control. Rather than provoke the very instability that the autocrat seeks to avoid, in all but the most egregious cases, prudence should dictate patience until normal 'cadre rotation' can be invoked at the end of a term in office.

## 2.7 Empirical Implications and Scope Conditions

In sum, if political competition rises, such as when a petite autocrat enters the last year of his scheduled term in office, then he will have incentive to reduce corruption. Knowing that his performance—in particular, his ability to keep the public in his purview sufficiently satisfied with his and the regime's rule—is monitored closely by the autocrat in these competitive times, he is incentivized to reduce petty corruption levels. While petty corruption rents are important for co-opting his supporters, the risk of angering the public and thereby the autocrat is too great in these times when attention is turned to his office-holding. If the governor has additional resources available, for example alternative sources of rents or a well-established political machine, then political competition will have a smaller incentivizing effect on him to reduce corruption than it would in the absence of those resources. Petite autocrats in precarious political positions will be strongly concerned about staying in office

[19] Most recently, President Putin abruptly replaced several governors in the summer of 2016, in what was widely seen as a rather shocking 'shake-up.'

and so will have incentive to reduce corruption even more than those in strong positions.

The theory of competition and corruption developed in this dissertation intends to encompass a wide variety of authoritarian regimes and varieties of corruption. In the following chapters, I test the theory on the Russian case over a period of time and spectrum of subnational regimes that captures much of this variation. Nevertheless, it is important to explicate scope conditions of the theory as it may apply to other countries and contexts. Three dimensions of autocracies are of particular note: institutionalization, the formal institutions governing regime structure and agent selection, and state capacity. I consider each in turn.

One important possible limitation of this theory is in that authoritarian regimes where autocratic control is very heavily consolidated—institutionalized through single-party rule, for example—corruption may fall far to the wayside in the set of signals a regime can use to judge performance and loyalty. The more institutionalized or cowed are agents in a regime, the greater the variety (or veracity) of signals may be available. What is more, engaging in petty, street-level corruption may become so costly to any actor that it is foregone altogether. In such institutionalized regimes, it may be that important offices in the regime hierarchy are governed more systematically than in countries like Russia. Similarly, petty corruption may be supplanted by grand corruption—lucrative deals made between high-powered political and economic actors.

Two additional sets of formal institutions may join the appointment calendar (which I conceive of in this dissertation as a prime manifestation of political competitiveness) to shape incentives for engaging in corruption. First, the presence or absence of political federalism (and possibly fiscal federalism, see Gervasoni 2009) can bring mid-level regime agents akin to

Russia's governors under greater or lesser control by the central autocrat. If agents have little power to engage in corruption in the first place or have few levers of control over bureaucrats in their realm, then political competition is unlikely to affect their behavior in the way that I argue that it does in this dissertation. Second, at the more 'democratic' end of the hybrid authoritarian regime spectrum, if these regime agents are selected through elections that are reasonably contested, then the role of petty corruption becomes more complex. Here, competing incentives such as a stronger need for resources to defeat electoral challengers and the availability of information inputs into voter accountability mechanisms (Ferraz and Finan 2008) make the links between the public, the autocrat, and governors—provided by petty corruption in my theory—much more difficult to assess.

Finally, while I argue in this study that corruption in authoritarian regimes depends on political conditions in addition to resulting from lack of robust state capacity, there is no doubt that state capacity can play an important role in determining corruption levels. In regimes where capacity is very low, the ways that political competitiveness shapes regime actors' incentives for engaging in corruption are likely to become irrelevant. If there is no state bureaucracy that can be governed by a governor, or if institutions are entirely unresponsive to his efforts to reduce corruption, then the risk of losing office due to excessive corruption levels becomes an unavoidable constant.

At another extreme of a spectrum explored empirically in Chapter 5, a regime with readily available rents such as those coming from natural resources has another tool available to co-opt actors into the regime. Here too, corruption, petty corruption especially, may become simply unnecessary or the regime may be able to pay the costs associated with overwhelming monitoring to suppress corruption across the board.

# 3 | Measuring Corruption: Experiences and Surveys

А няхай ты праваліся! —
Вось парадкі завяліся:
Дзе ні сунься, так і знай —
Ўсюды ў лапу дай ды дай...

-Belorussian folk song, 1922

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A central challenge to studying corruption—in any form and in any time or place—is measurement. By its very nature, corruption is illicit and shrouded in secrecy. It stands quite singularly as a physical, two-party economic transaction—and, as I argue in this dissertation, a politically-charged behavior—that is not measurable by typical means. One of the contributions of the present research is to measure petty corruption both directly and precisely by using individual-level survey experiences with corruption and advanced statistical techniques. In this chapter I describe the difficult task that has pervaded literatures on corruption and also the data and approach I take to addressing these challenges.

## 3.1 Existing Approaches

Some of the most prominent challenges in identifying the determinants of corruption are empirical. Causal inference, measurement, data validity, and operationalization of the central concept remain obstacles even as research on corruption has steadily advanced (Treisman 2000, 2007; Sharafutdinova 2012). For example, while some studies have pointed to political competition, the presence of liberal democratic institutions, or more broadly regime type as determinants of corruption, it is difficult to find exogenous sources of variation in these features (Beazer 2015). Much existing literature on corruption also struggles with the validity and operationalization of measures of corruption itself—too often corruption perceptions or other crude proxies must carry a heavy empirical burden, while observational research is severely hampered by data availability and weak validity (Treisman 2007; Olken 2009; Ferraz and Finan 2007; Gehlbach 2009). In addition, what limited survey data on corruption we have may be tainted by social desirability bias and vague conceptualizations of corruption perceptions (Rose and Mishler 2010; Treisman 2007; Sharafutdinova 2012; Olken 2009). Finally, the picture of corruption prevalence that we have is often a mere snapshot that fails to capture the phenomenon's evolution over time.

In recent years, scholars have increasingly begun to employ individual-level data about corruption. Tucker and Klasnja (2013, 2016) present empirical and theoretical analyses of pocketbook and sociotropic voting in reaction to corruption. Recent research by Sidorkin and Vorobyov (2015) use micro-level data on firms' experiences with corruption to show that trends akin to business cycles can be found in the economic sphere. These works generally address attitudes towards corruption as a phenomenon or other 'types' of corruption such

as economic corruption. What they handsomely contribute in theoretical importance and empirical rigor, they miss in capturing the realities of corruption exchanges and the roles that these exchanges play in *political* dynamics involving regimes and the mass public.

In this study, I move beyond these limitations in some ways. By contributing new measures of corruption and competition, I test the theory of authoritarian regime competitiveness, organization, and petty corruption explored above using data on contemporary sub-national Russia. I employ a large new dataset to show how authoritarian regime types and low-level bribery are related in the real world. The quantity and quality of data I employ here represent a substantial advance in our ability to effectively identify the correlates of petty corruption.

Existing efforts to measure corruption can generally be grouped into perceptions-based, experience-based, and observational measures. Perceptions measures such as Transparency International's 'Corruption Perceptions Index' (CPI) are perhaps easiest to collect, since they largely require polling experts and analysts about how corrupt they think a country or region is. The extent to which they are subject to various forms of measurement error, endogeneity to assessments of other country characteristics, or bias in capturing different types of corruption is difficult to conclusively state, but remains a weakness of these measures.

Observational measures, wherein researchers directly quantify the frequency or magnitude of corruption, improve on perceptions in many ways. They are generally less subject to bias and endogeneity. However, observational corruption measures suffer from at least two prominent drawbacks: they are difficult to collect and are usually more limited in external validity. This is because they require direct evidence of the occurrence of a phenomenon

which is almost always illegal for all parties and which is engaged in behind closed doors.[1] And when clever, powerful ways of solving this problem are produced by researchers, the methodology often only applies to a specific context that may not generalize to other types of corruption, other countries, or other sets of actors.

In this dissertation, I primarily take a direct, experiential, survey-based approach to measuring corruption.[2] This chapter describes the approach, the data, and how the advantages and disadvantages of each fit my research into existing literatures that quantify corruption.

## 3.2 My Data

Given the many difficulties with measuring and assessing corruption as it actually occurs, taking the simplest approach—asking people about it—offers many advantages.[3] Experts' views of corruption may be colored or prejudiced in many ways. Going directly to the victims of corruption can present a clearer picture than that provided by a small group of selected

[1]Two interesting examples underline the difficulty in obtaining peeks behind these closed doors and also the value in doing so. Most prominently, Peruvian President Fujimori and his security chief Montesinos give us a rare look at the explicit contracting often involved in grand corruption. McMillan and Zoido (2004) give a fascinating look at the written contracts used by this regime, showing also the importance of controlling the media with bribery if they cannot be brought to heel in other ways. The recent discovery of a book detailing payments, some of them apparently bribes, made by the Party of Regions of the former Ukrainian President Yanukovych to various groups during his tenure promises to elucidate many details of corruption as it is used in that post-Soviety state.

[2]Some novel, widely-applicable observational alternative measurement schemes are introduced and incorporated in Section 4.4.

[3]These distinctions between perceived and experienced corruption, or between subjective measures and population survey-based measures of corruption are discussed by Treisman (2000, 2007), Gehlbach (2009), Lee and Guven (2013), and Sharafutdinova (2010), among others.

outsiders offering subjective opinions.[4] Furthermore, as discussed later, corruption is likely to encompass a greater variety of malfeasant behaviors when presented in a subjective way to experts than it is in a carefully and concretely worded survey question.

To examine the determinants of low-level corruption as actually experienced by the public, I employ a newly assembled dataset from thirteen large, representative public opinion surveys. These surveys, outlined in Table 3.1 and described in detail in the appendix, all offer data on respondents' recent experiences with corruption from a public official.[5] The FOM GeoRating surveys in particular offer very large sample sizes and attempt to be representative of each region's population, giving great analytical purchase into the individual- and regional-level factors affecting corruption experiences.

This data offers several notable advantages over existing measures of corruption. First and foremost, these surveys offer a direct, survey-based measure of *experienced* corruption. The dependent variable in all models in this study, unless otherwise noted, is a dichotomous response to having experienced corruption (a request for a bribe) from a government official in the last 1-2 years. A 1 indicates that the respondent did experience a request or demand for a bribe, while a 0 indicates that he or she did not.

[4]One of the main potential drawbacks to this approach is that it relies on self-reporting of corruption experiences. The implications of this for sensitive question (social desirability) bias are discussed at length in a later section. Measurement error due to poor recall, misunderstanding, or survey firm error are constants in any research that employs survey data. Without minimizing the potential harm from these concerns, I note that the direction and magnitude of bias is *a priori* difficult to discern, that results appear very consistent across the many surveys in my data set, and that measurement error should at least be no greater of a worry for survey data than for typical perceptions-based or observational data.

[5]While the question wording does vary slightly from survey to survey, I do not expect any particular bias to arise from this fact. I include survey fixed effects in all using these surveys and see only cosmetic changes if they are excluded. Full details about the surveys and questions used are offered in Appendix 10.1.

**Table 3.1:** Summary of Survey Data

| Year | Survey | Num Obs | Num Regions |
|---|---|---|---|
| 2001 | INDEM | 2,017 | 15 |
| 2002 | FOM Penta | 1,933 | 46 |
| 2002 | INDEM | 5,666 | 40 |
| 2003 | FOM GeoRating | 31,325 | 63 |
| 2005 | Levada Courier | 1,651 | 45 |
| 2005 | INDEM | 3,100 | 29 |
| 2006 | Levada Courier | 1,570 | 46 |
| 2006 | Life in Transition | 1,000 | 32 |
| 2007 | Levada Courier | 1,601 | 46 |
| 2008 | FOM GeoRating | 32,289 | 65 |
| 2010 | FOM GeoRating | 32,870 | 68 |
| 2010 | Life in Transition | 1,391 | 37 |
| 2011 | FOM GeoRating | 52,670 | 74 |
| 2012 | Levada Courier | 1,601 | 45 |
| 2013 | Levada Courier | 1,601 | 45 |
| 2016 | Levada Courier | 1,484 | 47 |
| | | 181,659 | |

**Note:** FOM stands for *Fond Obshchestvennogo Mnenia*. Life in Transition Survey (LiTS) conducted under the auspices of the European Bank for Reconstruction and Development.

While none of the surveys included covers all of Russia's regions, a core of approximately 20-40 of the most populous regions of Russia are very frequently included in this set of surveys. Tables 3.2 and 3.3 show the number of non-missing responses to the dependent-variable survey question, tabulated by region and year while pooling across surveys.

Out of the 16 surveys in my data set, 11 were conducted by one of what might be termed the 'big three' Russian public opinion polling firms: the Public Opinion Fund (FOM, in Russian abbreviation), the Levada Center, and the Russian Public Opinion Research Center (VTsIOM). The remaining 5 surveys were conducted on the behalf of NGO 'INDEM' or were part of the international 'Life in Transition Survey' (LiTS) project. The final survey,

**Table 3.2:** Region-Year Sample Size (part 1 of 2)

| Region | 2001 | 2002 | 2003 | 2005 | 2006 | 2007 | 2008 | 2010 | 2011 | 2012 | 2013 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adygeja R | 0 | 0 | 0 | 23 | 23 | 23 | 0 | 14 | 487 | 25 | 25 | 19 |
| Aginskij-Burjatskij AO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Altaj R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Altajskij K | 0 | 170 | 495 | 72 | 77 | 40 | 465 | 567 | 782 | 42 | 42 | 38 |
| Amurskaja | 0 | 141 | 0 | 40 | 0 | 0 | 481 | 493 | 788 | 0 | 0 | 0 |
| Arhangel'skaja | 0 | 141 | 477 | 79 | 43 | 23 | 480 | 508 | 772 | 21 | 21 | 11 |
| Astrahanskaja | 0 | 27 | 482 | 0 | 0 | 0 | 458 | 463 | 776 | 0 | 0 | 0 |
| Bashkortostan R | 0 | 171 | 464 | 111 | 31 | 35 | 480 | 523 | 794 | 34 | 34 | 31 |
| Belgorodskaja | 0 | 140 | 352 | 0 | 20 | 0 | 461 | 460 | 775 | 0 | 0 | 0 |
| Brjanskaja | 0 | 27 | 495 | 0 | 20 | 0 | 478 | 490 | 783 | 0 | 0 | 0 |
| Burjatija R | 0 | 0 | 472 | 99 | 20 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chechenskaja R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Cheljabinskaja | 0 | 169 | 485 | 110 | 35 | 35 | 450 | 522 | 771 | 35 | 35 | 34 |
| Chukotskij AO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Chuvashskaja R | 40 | 0 | 496 | 24 | 22 | 22 | 492 | 522 | 796 | 20 | 20 | 20 |
| Dagestan R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 10 | 492 | 30 | 30 | 22 |
| Evenki | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Evrejskaja AO | 0 | 0 | 498 | 0 | 0 | 0 | 488 | 497 | 494 | 0 | 0 | 0 |
| Habarovskij K | 20 | 139 | 460 | 82 | 31 | 32 | 478 | 506 | 756 | 34 | 34 | 34 |
| Hakassija R | 0 | 29 | 0 | 12 | 8 | 11 | 462 | 499 | 497 | 10 | 10 | 10 |
| Hanty-Mansijskij AO | 0 | 26 | 0 | 0 | 40 | 0 | 472 | 490 | 788 | 10 | 10 | 10 |
| Ingushetija R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Irkutskaja | 220 | 25 | 473 | 21 | 0 | 0 | 479 | 507 | 781 | 0 | 0 | 20 |
| Ivanovskaja | 0 | 0 | 493 | 65 | 0 | 0 | 493 | 522 | 793 | 0 | 0 | 0 |
| Jamalo-Neneckij AO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 500 | 0 | 0 | 0 |
| Jaroslavskaja | 0 | 158 | 489 | 23 | 21 | 21 | 485 | 531 | 773 | 22 | 22 | 20 |
| Kabardino-Balkarskaja R | 0 | 60 | 0 | 0 | 0 | 0 | 0 | 0 | 469 | 0 | 0 | 9 |
| Kaliningradskaja | 0 | 0 | 489 | 25 | 46 | 26 | 448 | 500 | 745 | 24 | 24 | 34 |
| Kalmykija R | 0 | 0 | 489 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kaluzhskaja | 139 | 0 | 488 | 153 | 52 | 37 | 497 | 514 | 773 | 0 | 33 | 0 |
| Kamchatskij K | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 446 | 463 | 0 | 0 | 0 |
| Karachaevo-Cherkesskaja R | 0 | 0 | 0 | 24 | 22 | 22 | 0 | 0 | 479 | 0 | 0 | 20 |
| Karelija R | 0 | 170 | 486 | 37 | 28 | 32 | 463 | 493 | 492 | 0 | 0 | 0 |
| Kemerovskaja | 0 | 162 | 498 | 53 | 52 | 53 | 482 | 540 | 790 | 51 | 51 | 29 |
| Kirovskaja | 0 | 24 | 491 | 0 | 0 | 0 | 488 | 492 | 785 | 0 | 0 | 0 |
| Komi R | 0 | 0 | 482 | 0 | 20 | 0 | 476 | 481 | 782 | 0 | 0 | 0 |
| Komi-Permjackij AO | 0 | 0 | 0 | 12 | 11 | 11 | 0 | 0 | 0 | 0 | 0 | 0 |
| Korjakskij AO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Kostromskaja | 21 | 0 | 495 | 74 | 44 | 24 | 463 | 490 | 494 | 23 | 23 | 22 |
| Krasnodarskij K | 0 | 191 | 493 | 105 | 94 | 36 | 443 | 523 | 764 | 37 | 37 | 33 |
| Krasnojarskij K | 0 | 175 | 494 | 41 | 41 | 41 | 480 | 559 | 776 | 30 | 30 | 32 |
| Kurganskaja | 0 | 140 | 504 | 33 | 29 | 35 | 482 | 499 | 771 | 35 | 35 | 32 |
| Kurskaja | 0 | 24 | 493 | 35 | 35 | 35 | 484 | 520 | 787 | 32 | 32 | 29 |
| Leningradskaja | 320 | 140 | 481 | 25 | 25 | 25 | 479 | 507 | 781 | 23 | 23 | 20 |
| Lipeckaja | 0 | 21 | 437 | 34 | 74 | 34 | 488 | 511 | 793 | 23 | 23 | 28 |
| Magadanskaja | 0 | 28 | 0 | 11 | 10 | 10 | 472 | 483 | 475 | 11 | 11 | 0 |
| Marij Jel R | 0 | 0 | 485 | 0 | 20 | 0 | 498 | 520 | 497 | 0 | 0 | 0 |
| Mordovija R | 0 | 29 | 470 | 0 | 0 | 0 | 470 | 464 | 694 | 0 | 0 | 0 |
| Moskovskaja | 0 | 201 | 488 | 35 | 74 | 34 | 487 | 512 | 774 | 33 | 33 | 78 |

The 'legal status' of each region is abbreviated in this table. No marker indicates that the region is an *oblast'*, an 'R' indicates a republic, a 'K' indicates a *krai*, and the designation 'AO' indicates a *avtonomny okrug* (autonomous region). For present purposes, these designations are largely historical relics with no *de jure* effect on competition or corruption. In many of the following analyses I control for republic status and other statuses.

conducted in April 2016 by the Levada Center, was commissioned specifically by the author and colleagues, and so includes additional questions about corruption experiences.

**Table 3.3:** Region-Year Sample Size (part 2 of 2)

| | 2001 | 2002 | 2003 | 2005 | 2006 | 2007 | 2008 | 2010 | 2011 | 2012 | 2013 | 2016 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Moskva | 150 | 737 | 481 | 283 | 200 | 120 | 491 | 721 | 784 | 135 | 135 | 125 |
| Murmanskaja | 0 | 0 | 478 | 0 | 0 | 0 | 483 | 507 | 753 | 0 | 0 | 0 |
| Neneckij AO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Nizhegorodskaja | 0 | 169 | 486 | 126 | 51 | 39 | 487 | 518 | 779 | 38 | 38 | 44 |
| Novgorodskaja | 20 | 170 | 492 | 0 | 0 | 0 | 497 | 499 | 493 | 0 | 0 | 0 |
| Novosibirskaja | 0 | 170 | 477 | 146 | 104 | 46 | 476 | 540 | 756 | 46 | 46 | 44 |
| Omskaja | 256 | 165 | 477 | 121 | 53 | 33 | 470 | 521 | 783 | 35 | 35 | 33 |
| Orenburgskaja | 0 | 29 | 481 | 48 | 68 | 48 | 503 | 532 | 783 | 46 | 46 | 35 |
| Orlovskaja | 0 | 0 | 496 | 0 | 0 | 0 | 445 | 496 | 793 | 0 | 0 | 0 |
| Penzenskaja | 0 | 29 | 493 | 49 | 0 | 0 | 472 | 507 | 777 | 0 | 0 | 0 |
| Permskaja | 81 | 171 | 0 | 72 | 67 | 27 | 0 | 524 | 791 | 34 | 34 | 30 |
| Primorskij K | 80 | 163 | 450 | 30 | 44 | 25 | 383 | 430 | 661 | 24 | 24 | 23 |
| Pskovskaja | 0 | 135 | 483 | 55 | 20 | 0 | 468 | 493 | 483 | 30 | 30 | 24 |
| Rjazanskaja | 0 | 145 | 484 | 0 | 0 | 0 | 491 | 485 | 789 | 0 | 0 | 0 |
| Rostovskaja | 0 | 166 | 458 | 113 | 84 | 45 | 481 | 559 | 769 | 49 | 49 | 41 |
| S-Peterburg | 0 | 188 | 473 | 176 | 91 | 52 | 478 | 621 | 793 | 54 | 54 | 57 |
| Saha (Jakutija) R | 0 | 24 | 0 | 9 | 8 | 8 | 0 | 0 | 0 | 0 | 0 | 0 |
| Sahalinskaja | 0 | 0 | 0 | 0 | 0 | 0 | 471 | 468 | 450 | 0 | 0 | 0 |
| Samarskaja | 0 | 170 | 489 | 83 | 34 | 35 | 465 | 527 | 763 | 35 | 35 | 31 |
| Saratovskaja | 0 | 170 | 467 | 106 | 78 | 38 | 479 | 545 | 775 | 36 | 36 | 31 |
| Severnaja Osetija R | 0 | 0 | 494 | 0 | 0 | 0 | 0 | 9 | 481 | 0 | 0 | 0 |
| Smolenskaja | 0 | 25 | 463 | 36 | 32 | 36 | 459 | 513 | 783 | 42 | 42 | 30 |
| Stavropol'skij K | 130 | 175 | 495 | 69 | 32 | 33 | 466 | 529 | 776 | 67 | 67 | 34 |
| Sverdlovskaja | 210 | 193 | 486 | 168 | 69 | 49 | 481 | 565 | 794 | 35 | 35 | 35 |
| Tajmyrskij AO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tambovskaja | 0 | 140 | 474 | 0 | 0 | 0 | 477 | 487 | 761 | 33 | 0 | 0 |
| Tatarstan R | 0 | 164 | 473 | 86 | 111 | 51 | 482 | 553 | 795 | 48 | 48 | 42 |
| Tjumenskaja | 0 | 163 | 498 | 22 | 43 | 21 | 488 | 524 | 795 | 19 | 19 | 15 |
| Tomskaja | 0 | 139 | 491 | 0 | 20 | 0 | 476 | 475 | 745 | 0 | 0 | 0 |
| Tul'skaja | 0 | 163 | 492 | 35 | 33 | 35 | 493 | 507 | 783 | 35 | 35 | 22 |
| Tverskaja | 0 | 171 | 492 | 0 | 0 | 0 | 487 | 497 | 753 | 0 | 0 | 0 |
| Tyva R | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Udmurtskaja R | 220 | 174 | 492 | 0 | 0 | 0 | 488 | 563 | 791 | 0 | 0 | 8 |
| Ul'janovskaja | 0 | 158 | 494 | 48 | 47 | 48 | 497 | 524 | 794 | 44 | 44 | 39 |
| Ust'-Ordynskij Burjatskij AO | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Vladimirskaja | 0 | 29 | 483 | 36 | 74 | 34 | 486 | 499 | 771 | 31 | 31 | 29 |
| Volgogradskaja | 110 | 166 | 482 | 132 | 86 | 46 | 457 | 575 | 787 | 46 | 46 | 53 |
| Vologodskaja | 0 | 30 | 499 | 0 | 20 | 0 | 488 | 493 | 784 | 0 | 0 | 0 |
| Voronezhskaja | 0 | 167 | 477 | 160 | 33 | 35 | 473 | 548 | 791 | 34 | 34 | 24 |
| Zabajkal'skij kraj | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 418 | 729 | 0 | 0 | 0 |

As noted by Daniel Treisman (2000, 2007), there is a distinct and troubling lack of research exploiting experienced corruption. With few exceptions, subjective expert assessments take the place of reports of corruption as it is experienced by citizens and businesspeople. Measures based on observation and direct measurement of corruption offer many advantages over subjective measures, but they capture something rather different: secret flows of rents and bribes between economic and state actors. The empirical focus here is on the interface between low-level representatives of the state – bureaucrats – and the citizenry

they are tasked with regulating. This measure is much more reproducible and representative than are subjective expert ratings and observational measures, relying as it does on a nationally-representative survey conducted recently and in a large subset of regions in Russia. It assesses corruption directly rather than incorporating broader concepts of governance or government performance, as subjective ratings are likely to do.

**Table 3.4:** Descriptive Statistics: Individual-Level Variables

| **Variable** | **N** | **Min.** | **Max.** | **Mean** | **Median** | **#NA** |
|---|---|---|---|---|---|---|
| Bribery Experience | 173422 | 0.00 | 1.00 | 0.16 | 0.00 | 8237 |
| Male | 181593 | 0.00 | 1.00 | 0.45 | 0.00 | 66 |
| Education | 181422 | 1.00 | 4.00 | 2.57 | 3.00 | 237 |
| Age | 170811 | 2.00 | 99.00 | 44.87 | 44.00 | 10848 |
| Income | 151277 | -1.72 | 30.44 | 0.00 | -0.13 | 30382 |
| Urban | 181594 | 0.00 | 1.00 | 0.67 | 1.00 | 65 |
| Internet User | 127682 | 0.00 | 1.00 | 0.38 | 0.00 | 53977 |
| Gov'r Approval | 133553 | 0.00 | 1.00 | 0.42 | 0.00 | 48106 |
| Putin Approval | 73913 | 0.00 | 1.00 | 0.69 | 1.00 | 107746 |
| UR Supporter | 134914 | 0.00 | 1.00 | 0.49 | 0.00 | 46745 |
| Judges Bribe-Givers | 78970 | 0.00 | 6.00 | 0.51 | 1.00 | 102689 |

Despite a voluminous literature on corruption, we know relatively little about how everyday experienced corruption is related to the spectrum of authoritarian regimes types we observe in modern authoritarian states. Russia provides a valuable view into this relationship. By examining variation in corruption across the many regions of Russia, which have exhibited starkly differing 'types' and 'degrees' of authoritarianism over space and time, we can better grasp the dynamics connecting corruption and authoritarian regimes. We can take advantage of a unitary legal system and single national government while exploiting variation in regional political systems.

Who pays bribes in modern authoritarian Russia? Figure 3.1 shows the relationships

between a variety of individual characteristics and the probability of having experienced bribery. These findings accord well with what we know about the prevalence of bribery in other contexts. Men are more likely to experience bribery, as are the well educated, the young, urban residents, and those with higher incomes. Most notably, three characteristics that I will later use to measure the closeness of individuals to the regime are strongly negatively correlated with bribery experiences: being a government employee, voting for or supporting the dominant party, United Russia (UR), and having an approving attitude towards the governor of one's region.[6]

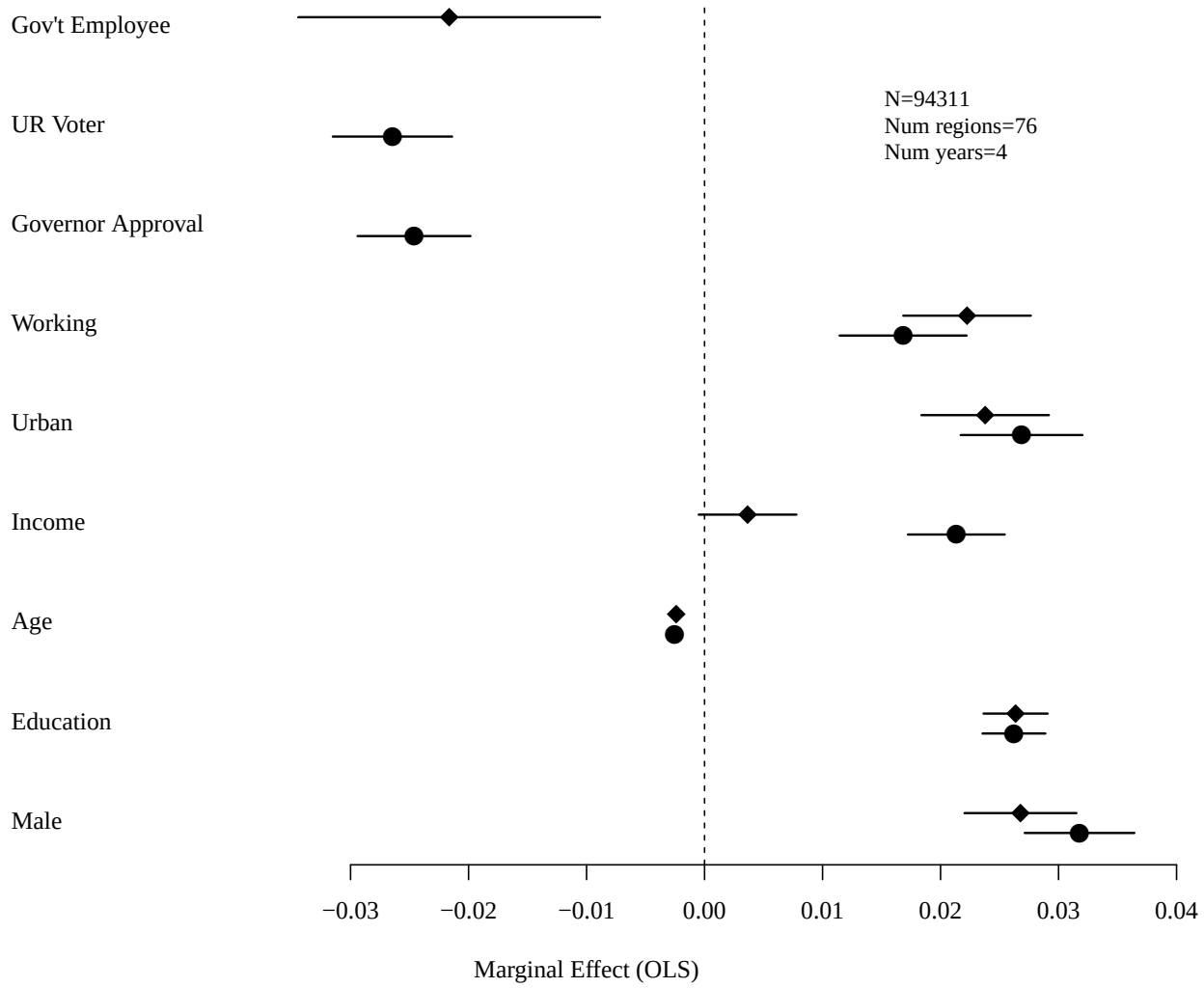
## 3.3 Missing Data and Non-Response

Given the empirical design of the analyses I use, missingness can arise as a problem in any of three places: the dependent variable, individual-level covariates, and region-year covariates. Despite its marked disadvantages, I rely on simple listwise deletion of incomplete cases throughout this dissertation. This is for two reasons: the abundance of survey data available to me mitigates the dangers resulting from loss of sample size; and multilevel modeling of large-N, time series cross-sectional data such as this data set is quite effective at smoothing out *inadvertent* missingness in particular regions or years (Shor, Bafumi, Keele, and Park 2007; Fairbrother 2014; Bell and Jones 2015).

The first 'type' of missingness, missingness in the dichotomous survey question asking respondents about their experience with bribery, I discuss in the subsection below on item

[6]To be sure, such correlations leave open concerns of endogeneity. I cannot exclude the possibility that being a regime supporter or employee may affect the likelihood of experiencing corruption. I take these findings as suggestive and largely descriptive.

**Figure 3.1:** Authoritarian Corruption and Individual Demographic Characteristics




Note: coefficient plot showing two linear multilevel regressions. Points represent estimated coefficients; lines represent 95% confidence intervals. Data: FOM GeoRating and Life in Transition Survey representative surveys, 2003, 2006, 2008, 2010, 2011.

non-response. As to the second, of the 5 primary individual-level covariates I include in my models (age, gender, education, urban/rural, and income), only income shows substantial levels of missingness. My results are robust to exclusion of this variable, which, as with all

individual-level predictors used here, does not appear to substantially affect my results.

With regard to region-year variables, no missingness is found in the key predictor, scheduled end of term. As inference is based solely on the plausible exogeneity of *this* variable, occasional missingness in the additional region-year controls I introduce in some models is of minimal concern. The regions with the least reliable and most missing region-year statistical data are often those least likely to be included in the surveys I employ. Results are robust to inclusion or exclusion of a large array of these region-year predictors.

### 3.3.1 Item Non-Response

A larger potential concern, discussed more broadly in the context of sensitive question bias in Section 3.4, is that of non-random item non-response in the dependent variable I use, experienced corruption.[7] I generally find very low rates of item non-response. Below I show average statistics for item non-response across surveys, regions, and years, along with regressions placing dichotomous non-response on the left hand side and individual- and region-year-level predictors on the right hand side.

## 3.4 Sensitive Question Bias

One possible concern is the validity of the outcome measure, individuals' responses to a survey question about having been asked to give a bribe. If respondents are unwilling to

[7]Unfortunately, information on overall survey response rates is generally unavailable for the surveys I employ. I have no reason to believe that this could be a source of bias or invalidity for my inferences. The surveys were conducted by highly respected professional Russian public opinion polling firms.

**Table 3.5:** Predictors of Item Non-Response

| | DV: Dichotomous Non-Response to Bribe Request | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Male | 0.002* | 0.002* | 0.002* | 0.002* |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Education | −0.001 | −0.001 | −0.001 | −0.001 |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Age | 0.001 | 0.001 | 0.001 | 0.001 |
| | (0.0005) | (0.001) | (0.0005) | (0.001) |
| Income | 0.004*** | 0.004*** | 0.004*** | 0.005*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Urban Rural | −0.002** | −0.003** | −0.002** | −0.003** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Levada Dummy | 0.003 | 0.002 | 0.003 | 0.001 |
| | (0.005) | (0.005) | (0.005) | (0.005) |
| Scheduled End of Term | 0.009*** | 0.008*** | | |
| | (0.001) | (0.001) | | |
| Log GRP | | −0.020*** | | −0.020*** |
| | | (0.004) | | (0.003) |
| Pct Russian | | −0.001 | | −0.001 |
| | | (0.027) | | (0.028) |
| Log Population | | 0.016*** | | 0.019*** |
| | | (0.005) | | (0.006) |
| Republic/city/AO | | −0.001 | | −0.006 |
| | | (0.012) | | (0.013) |
| Pct Urban Population | | 0.069** | | 0.097*** |
| | | (0.030) | | (0.031) |
| Petrov Competitiveness | | | −0.010*** | −0.010*** |
| | | | (0.002) | (0.002) |
| Constant | 0.039*** | 0.010 | 0.042*** | −0.055 |
| | (0.006) | (0.063) | (0.006) | (0.065) |
| Number of regions | 78 | 77 | 78 | 77 |
| Number of years | 6 | 6 | 6 | 6 |
| N | 130,669 | 129,977 | 130,669 | 129,977 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.

tell the truth because they worry about the survey interviewer judging them for engaging in this behavior, then this social desirability bias will produce an overall underreporting of experienced petty corruption. It is also possible that bias could arise not from concern about the social desirability of their response but from concern about implicating themselves in a crime. After all, giving a bribe is illegal in Russia just as accepting one is. Finally,

respondents may worry that a vengeful regime could find out about their having divulged this sensitive information to a third-party, resulting in possible politically-motivated punishment.

There are several reasons why these concerns are very unlikely to threaten the data I employ in this study's analyses with bias. First, it is notable that the question wording in the surveys I use is about a *request* for a bribe, not about whether or not the respondent actually paid a bribe. It is not illegal or particularly risky to truthfully report that someone merely asked you for a bribe, so the fact that this question is quite oblique should drastically reduce any risk of bias. In the few surveys in my data that do ask about the outcome of the bribe request, this question invariably follows the question about the request. This feature does not eliminate the possibility that the regime could be unhappy that a respondent even discussed the fact of a bribe request having occurred. However, there is no reason to think that respondents expect their survey responses to be tied back to them personally by a regime apparently obsessed with punishing such a minor (and common) statement. The surveys in question were all conducted by private, well-established, respected polling agencies. Interview preambles included a notice of confidentiality.[8]

Second, Russians are on the whole not shy about discussing corruption, which is generally regarded as being a fact of life in Russia for centuries. Reports of bribery, grand and petty, is common in the media. Once again, their is no *a priori* expectation that individuals' survey responses would be tied back to them or that the government is involved in the surveys at all. Third, the direct questions I use exhibit very low rates of item non-

[8]In the case of the surveys conducted by FOM, the survey preamble was the following: "Allow me to introduce myself. I am an interviewer from the Fund for Public Opinion. We are requesting your participation in our survey. This will not take much time. We guarantee the confidentiality of the information we receive from you. Thank you in advance for your cooperation!"

response.[9] If respondents were concerned about the sensitive nature of the question, one would assume that many respondents, in addition to those who would untruthfully report 'no,' would refuse to answer and thus avoid confirming or lying. Furthermore, non-response would only be a threat to the identification strategy employed in this study if it were strongly correlated with political competitiveness. Regressing an indicator for item non-response on individual-level characteristics and region and year random effects in a multilevel model, I find very little variation between regions in the amount of non-response to this question. While *Scheduled End of Term* is positively and statistically significantly associated with non-response, the effect is miniscule—on the order of a 0.1 percentage point change. The Petrov competitiveness measure is negatively associated with non-response, though also with a very small effect size. These facts, together with consistently low levels of non-response across regions, provide strong evidence that non-response is not generating concerning amounts of bias in my results.

Finally, I present the results from an original list experiment included on a nationally-representative Levada Center survey of 1600 Russians in April 2016. List experiments, also known as the item-count technique, are a way of asking sensitive questions in surveys while guaranteeing that no one—not even the interviewer or researcher—will know any one individual's response (Corstange 2009; Blair and Imai 2012; Glynn 2013). To do this, it only allows for an aggregate measure of how frequently respondents said 'yes' to the sensitive question. Respondents are given a list of possible responses and are told to say only *how many* of the items they respond positively to. By randomly giving some respondents (those

[9] A number of the surveys included in this dataset did not allow for a response of 'don't know' or 'refuse to answer,' so their non-response rates are zero.

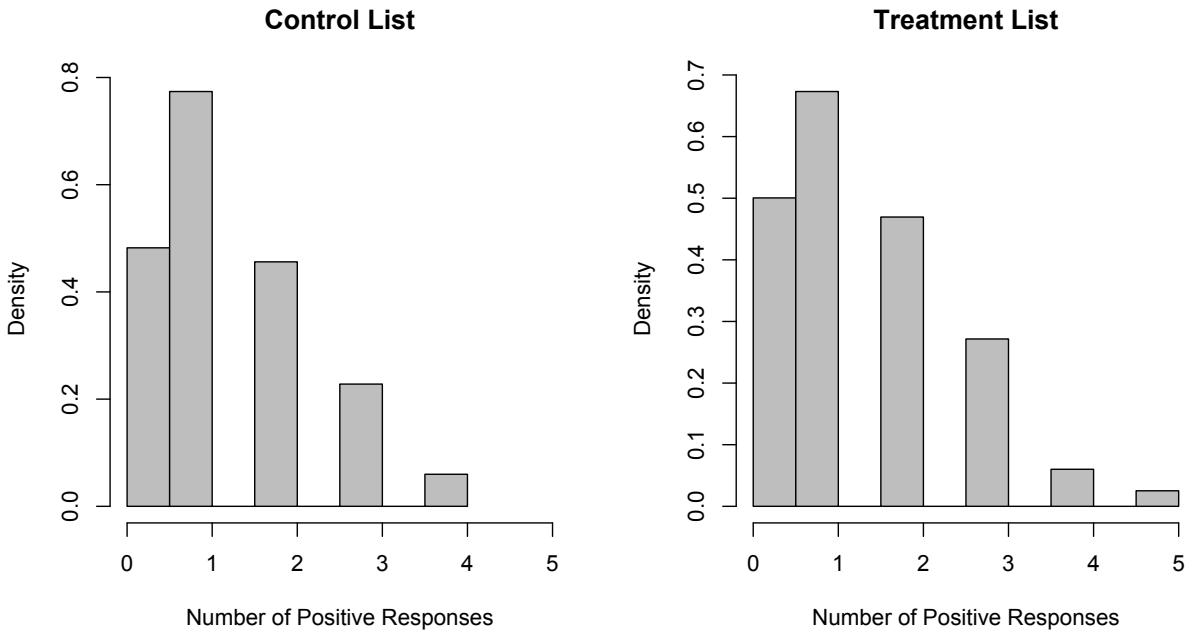
in the 'control' group) a list of innocuous responses and other respondents (the 'treatment' group) that list with the addition of the sensitive response, the researcher is able to determine what proportion of the sample responded affirmatively to the sensitive response.

The question that was included in this survey was worded as follows, with the randomly provided sensitive response in bold:

> **List Experiment 1:** Look at this card and try to remember which of the following actions you have taken at least once in the last 12 months. Don't say which actions, just say how many of the actions listed on this card you have taken at least once in the last 12 months.
>
> 1. Gone to local authorities to get some documents in order
> 2. Seen the head of your local administration on television
> 3. Called local authorities to get information about the services they offer
> 4. Complained to a friend about the work of your local administration
> 5. **Given a bribe to an official of your local administration in order to solve an everyday problem**

Respondents in the treatment group were given the sensitive item in addition to the four control items that were presented to all respondents. Figure 7.5 shows histograms of the number of items respondents replied affirmatively to in the control and treatment groups.

**Figure 3.2:** Histograms of List Experiment Responses




In both this list experiment and a similar one conducted in 2012 (detailed in Chapter 7), the proportion of responses indicating an experience with bribery accords very well with the 'traditional' direct question asked in the same survey, as described below, with the direct question responses in my survey data on the whole, and with existing research that indicates that approximately 15-20% Russians report bribery experiences. This suggests that there is little difference between direct questioning about corruption from an array of surveys and the list experiment method. Russians do not appear to be concerned with admitting directly to survey interviewers that they have had a bribery experience.

Additional evidence that the sensitivity of this question is of minimal concern is

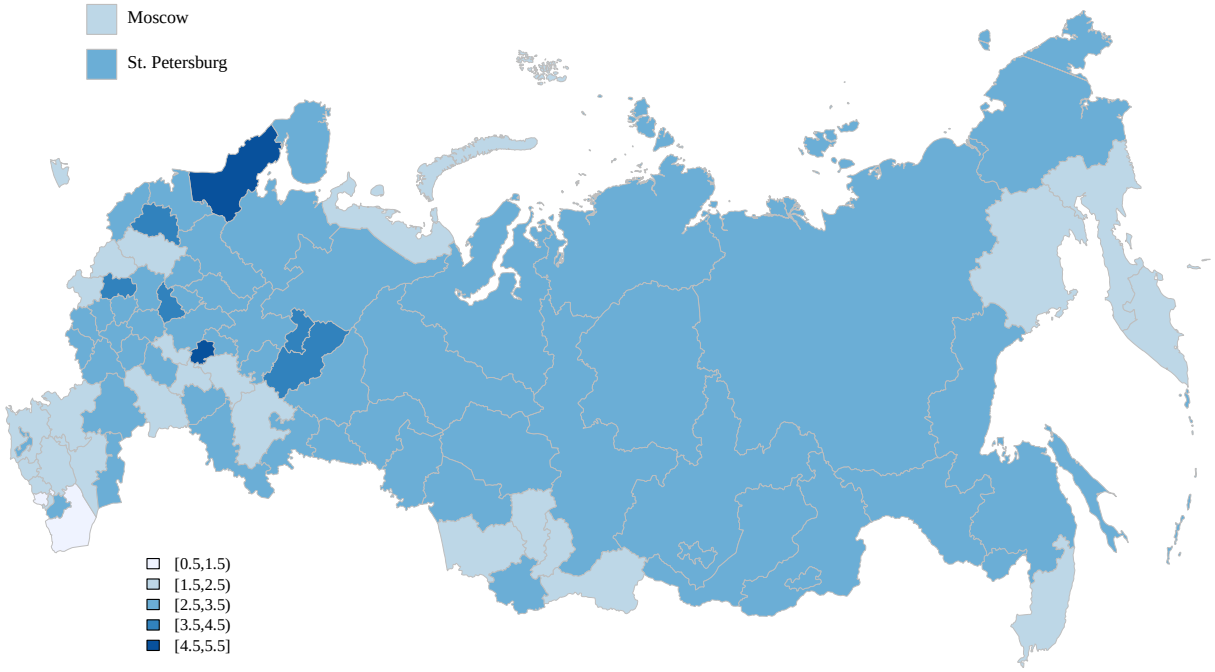
provided by examining data from the list experiment and using statistical tests to examine any differences with the direct question. Aronow, Coppock, Crawford, and Green (2015) show how the inclusion of both a direct question and list experiment question on a survey can mitigate many of the limitations of each approach. I use this framework and associated tests implemented in the 'list' package in R, to analyze an original survey that I conducted with colleagues in March 2016, which was implemented by the Levada Center, a leading Russian survey firm.[10] Aronow et al. (2015) provide a simple and useful test, which they call Placebo Test I, for whether the assumptions underlying the list experiment hold. "If these assumptions hold, the standard list experiment difference-in-means estimator will recover estimates that are in expectation equal to one among the subsample that answers 'Yes' to the direct question" and the test will fail to reject the null hypothesis (Aronow et al. 2015, pg. 54). The p-value when conducting this test on my list experiment data is 0.088, providing suggestive evidence that the rather stringent assumptions underlying this list experiment do indeed hold. Most importantly, the non-parametric estimator derived by Aronow et al. (2015) that combines information from the direct question and list experiment shows an effect of 0.134 (SE=0.066), which is extremely close to the value of 0.146 produced by the direct question alone. On this basis, there is little reason to fear that respondents are overly hesitant to provide truthful responses to this direct question about having experienced corruption.

[10]Information on this data and the list experiment conducted are available in the appendix.

## 3.5 Corruption: Perceived, Experienced, High-Level, Low-Level

The only existing measure of corruption in Russia at the sub-national level that encompasses all of Russia's regions is the *corrup* subcomponent of the Petrov-Titkov regional democracy scores (Petrov and Titkov 2013). This measure ranges from 1 to 5, with a 5 indicating minimal or absent corruption in that region. Figures 3.3 and 3.4 show how these measures assess corruption levels in Russia's regions.

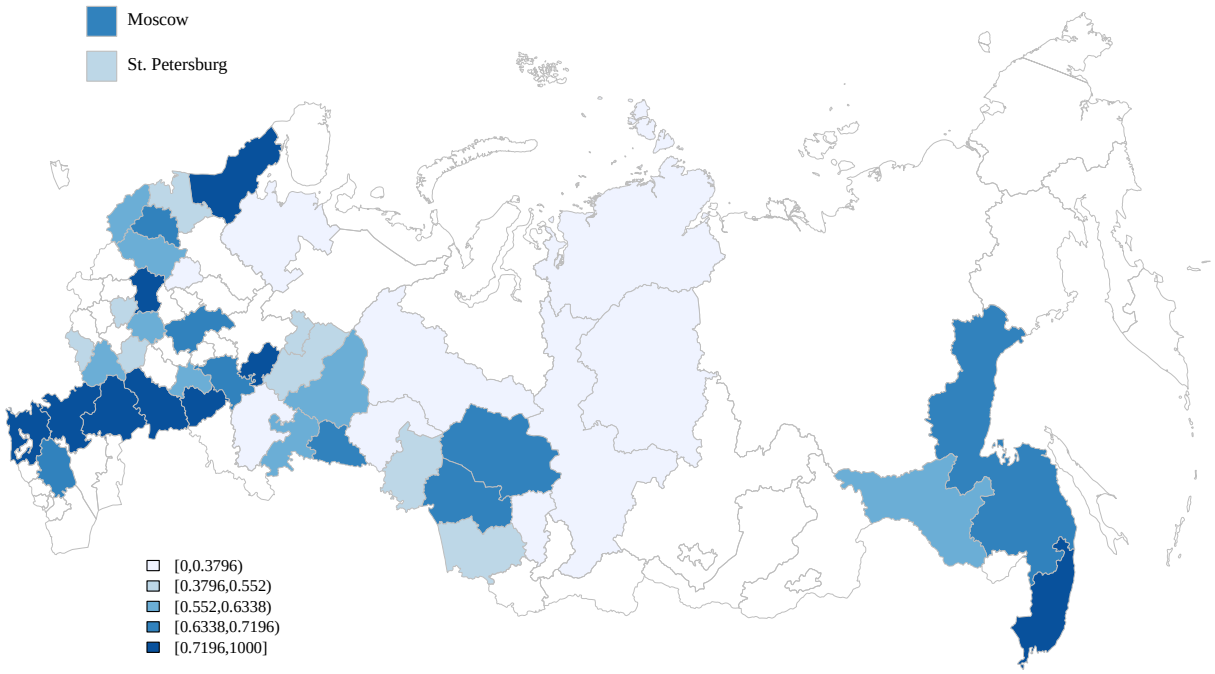
**Figure 3.3:** Map of Petrov Corruption Component




Another prominent assessment of corruption in Russia comes from a Transparency International survey and study conducted in the early 2000s in 20 regions. Figure 3.4 shows

how the regions included in this survey report corruption experiences on average.

**Figure 3.4:** Map of TI Corruption Assessment




## 3.6 Describing Petty Corruption in Russia

Who gives bribes in Russia and to whom? What demographic and other individual characteristics are associated with having to give bribes to public officials? What are Russians' overall attitudes and opinions about corruption, bribe-givers, bribe-takers, and how are these views connected with other political attitudes and behaviors? In this section I provide the first comprehensive and reliable answers to these questions.

### 3.6.1 Who Gives Bribes?

Who is more likely to have had personal experience with corruption in Russia? Do trends seen in previous sections regarding the public's experiences with corruption in other countries around the world carry over to Russia? Tables 3.6-3.7 show a number of linear multilevel models with the dichotomous corruption experience measure as the dependent variable and a variety of demographic and other individual-level predictors.

As expected, and in accordance with other research on corruption, men are more likely to experience corruption than are women. The regressions in Table 3.6 show that this effect is consistently about 3-4 percentage points. More educated Russians are also more likely to encounter bribery, controlling for other factors. Each one-unit increase in the four-point education level scale is associated with a 2-3 percentage point increase in the probability of having experienced bribery. A similar effect is found for living in an urban area as opposed to a rural area. Younger respondents are more likely to have experienced corruption than are the old, as are wealthier Russians.

Very interestingly, though not surprisingly perhaps, respondents who indicated that they voted for or would vote for United Russia experience substantially less corruption than others. It is not clear without further investigation whether this is because the regime targets non-supporters as a source of bribes or whether other unobserved factors are in effect. The fact that this association persists even when controlling for other individual characteristics likely to confound the relationship lends some credence to a meaningful interpretation of this coefficient.

**Table 3.6:** Additional Individual-Level Correlates of Bribery Experiences

| | DV: Bribery Experience | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Male | 0.033*** | 0.022*** | 0.037*** | 0.047*** | 0.044*** |
| | (0.002) | (0.003) | (0.002) | (0.002) | (0.003) |
| Education | 0.026*** | 0.031*** | 0.026*** | 0.020*** | 0.017*** |
| | (0.001) | (0.002) | (0.001) | (0.001) | (0.002) |
| Age | −0.002*** | −0.003*** | −0.002*** | −0.002*** | −0.002*** |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Income | 0.021*** | −0.001 | 0.017*** | 0.010*** | 0.032*** |
| | (0.002) | (0.001) | (0.002) | (0.002) | (0.003) |
| Urban | 0.025*** | 0.025*** | 0.028*** | 0.026*** | 0.021*** |
| | (0.002) | (0.004) | (0.002) | (0.003) | (0.003) |
| Employed | 0.017*** | 0.021*** | 0.021*** | 0.022*** | 0.003 |
| | (0.003) | (0.004) | (0.003) | (0.003) | (0.004) |
| UR Voter | −0.028*** | | | | |
| | (0.003) | | | | |
| Liberal Voter | 0.037*** | | | | |
| | (0.006) | | | | |
| Communist Voter | 0.003 | | | | |
| | (0.004) | | | | |
| Voted in Duma Elect | | −0.029*** | | | |
| | | (0.004) | | | |
| Approval of Governor | | | −0.030*** | | |
| | | | (0.002) | | |
| Region Run Well | | | | −0.052*** | |
| | | | | (0.003) | |
| Could See Self Protesting | | | | | 0.096*** |
| | | | | | (0.003) |
| Constant | 0.161*** | 0.193*** | 0.156*** | 0.145*** | 0.106*** |
| | (0.023) | (0.010) | (0.025) | (0.026) | (0.037) |
| Number of regions | 76 | 68 | 76 | 74 | 74 |
| Number of years | 4 | 1 | 4 | 3 | 2 |
| N | 107,901 | 52,409 | 106,259 | 86,567 | 60,664 |

Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income, employed not shown.

As shown in Table 3.7. Russians who work in government or in government 'force structures' (i.e. the military or police) are substantially less likely to have experienced corruption. This is not at all surprising, but offers the first clear evidence that a certain 'class' of privileged individuals are somewhat exempt from the bribe-hungry world of everyday Russians.

**Table 3.7:** Work Experience and Bribery Experiences

| | DV: Bribery Experience | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Male | 0.038*** | 0.042*** | 0.029*** | 0.039*** |
| | (0.002) | (0.002) | (0.005) | (0.003) |
| Education | 0.026*** | 0.021*** | 0.015*** | 0.023*** |
| | (0.001) | (0.001) | (0.003) | (0.002) |
| Age | −0.002*** | −0.002*** | −0.003*** | −0.002*** |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Income | 0.014*** | 0.017*** | −0.025*** | 0.011*** |
| | (0.002) | (0.002) | (0.004) | (0.003) |
| Urban | 0.027*** | 0.027*** | 0.014*** | 0.026*** |
| | (0.002) | (0.002) | (0.005) | (0.004) |
| Employed | 0.022*** | 0.008*** | 0.015*** | −0.018** |
| | (0.002) | (0.003) | (0.005) | (0.009) |
| Manager | | 0.075*** | | 0.051*** |
| | | (0.004) | | (0.005) |
| Owns Business | | | 0.175*** | |
| | | | (0.012) | |
| Works as Professional | | | | 0.014 |
| | | | | (0.009) |
| Gov't Employee | | | | −0.013 |
| | | | | (0.011) |
| Works in Unskilled Labor | | | | 0.002 |
| | | | | (0.009) |
| Works in Services etc. | | | | 0.023*** |
| | | | | (0.009) |
| Constant | 0.157*** | 0.147*** | 0.224*** | 0.147*** |
| | (0.028) | (0.028) | (0.015) | (0.038) |
| Number of regions | 76 | 76 | 65 | 71 |
| Number of years | 5 | 4 | | 3 |
| N | 124,570 | 108,671 | 24,939 | 55,072 |

Standard errors shown in parentheses; all models are linear non-nested multilevel. Individual-level predictors male, age, education, urban, income, employed not shown.

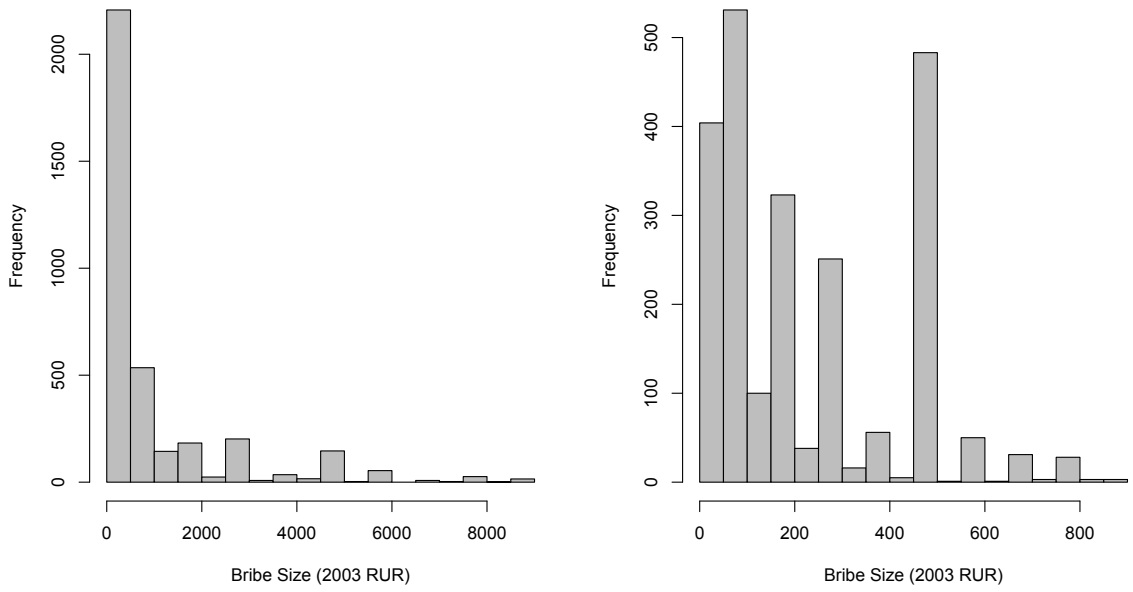
### 3.6.2 What are Bribes Like?

What do we know about the bribes that Russians are describing in their responses to these surveys? Unfortunately rather little, as only one of the survey waves, the FOM GeoRating survey in 2003, asks about the bribes themselves. The only information available here is on the size of the bribes that respondents recall giving. Each individual was given the

opportunity to report a figure in rubles. These results lend additional credibility to the data I employ in my main empirical analyses; they generally conform well with expectations.

Only 139 respondents, about 4% of those who reported the size of the bribe they gave, indicated that they gave over 10000 rubles (about $165 at the time of the survey in 2003). Figure 3.5 shows frequency distributions for these bribes; the left panel shows all bribes under 10000 rubles, the right shows more detail for bribes under 1000 rubles.

**Figure 3.5:** Bribe Size

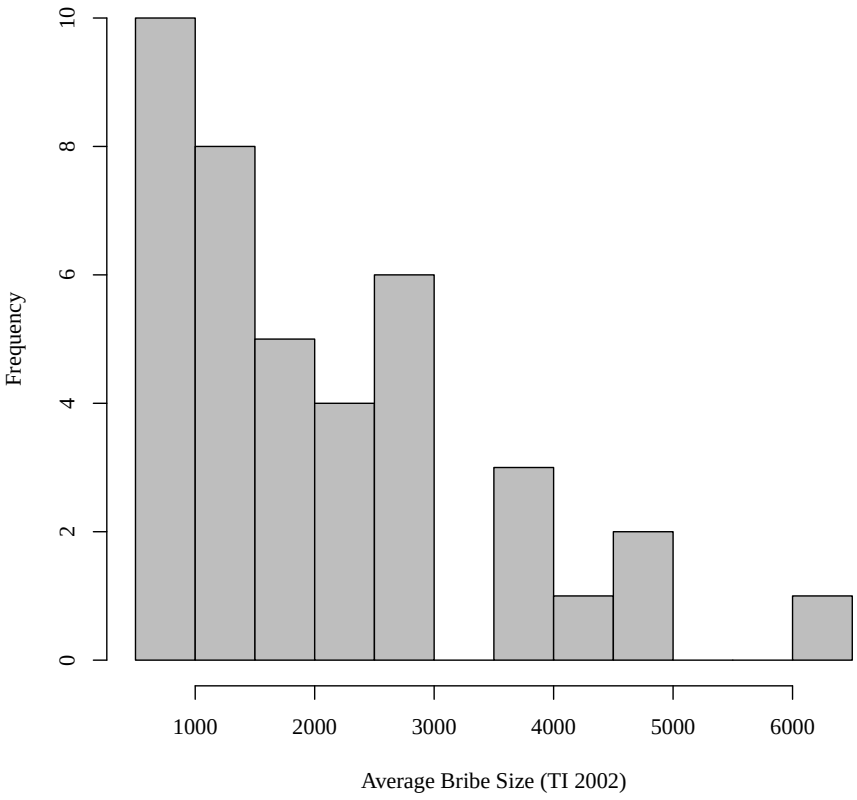



**Note:** Left panel shows a histogram of bribe sizes indicated in the full sample, in 2003 Russian rubles (RUR). Right panel shows the subset of bribe sizes under 1000 rubles. These data come from the 2003 FOM GeoRating survey.

A comparison can be made with data on bribes as reported by Transparency Inter-

national in their 2002 survey. An important difference is that this survey asked about all bribes, not just bribes to government officials. As such, this measure is likely capturing some other large bribes to healthcare workers or those in education, who, while technically government employees, may not be considered 'officials' in a survey response. In any case, the TI data shown in Figure 3.6 confirms that most bribes are at or around 1000 rubles.

**Figure 3.6:** Bribe Size (TI 2002)




We can see that in most cases the bribes that Russians report are quite small. The

median bribe (among bribes under 10000 rubles) was 500 rubles, or about $8 in 2003. The mean bribe under 10000 rubles was 1101 rubles, with a standard deviation of 1617 rubles.

Men give much larger bribes than do women; greater personal income is, unsurprisingly, strongly positively correlated with bribe size, as is being employed. Another interesting finding is that bribes are substantially and statistically significantly larger in regions with greater GDP per capita. This suggests that the size of a bribe is 'adjusted' to some extent to fit the wealth of the individuals it is being extracted from.

### 3.6.3 To Whom are Bribes Given?

The measure of bribe experience I employ captures all corruption to government officials. Who exactly are these government officials? While the data here unfortunately does not ever ask about who exactly is receiving the bribes in question, it does ask about respondents' perceptions of which areas of government are most engaged in corruption. By taking the responses to this question only for those respondents who indicated having given a bribe, a reasonable proxy measure can be constructed. In this section I explore, using this proxy, the characteristics of the bribe takers in this data.

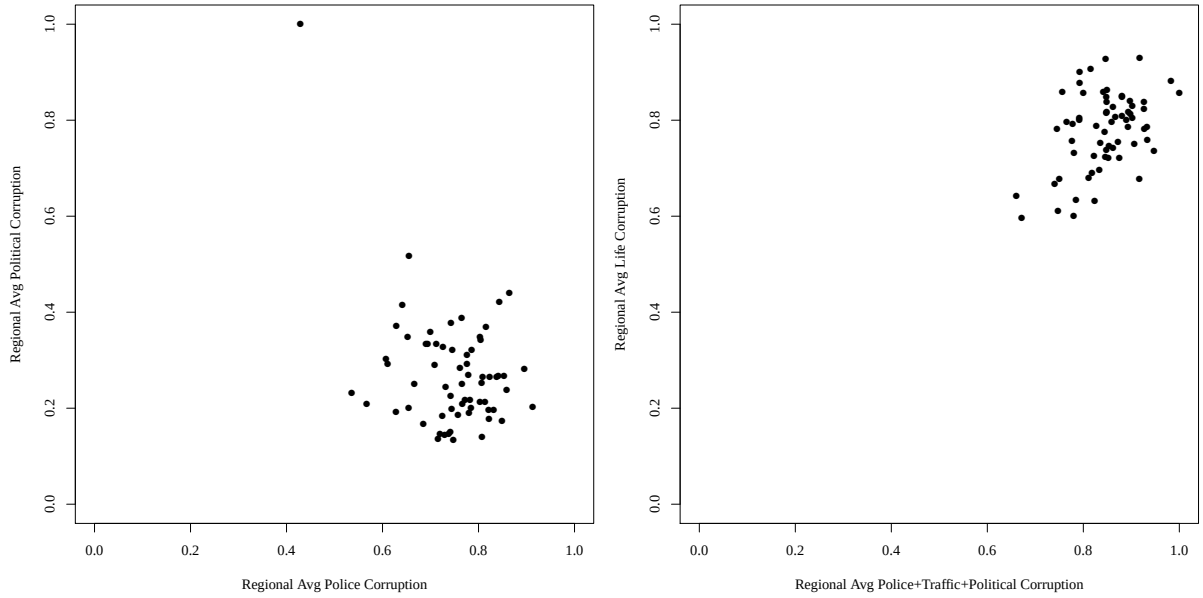
Fitting expectations and previous research (Gerber and Mendelson 2008; Holmes 2012), by far the most frequent takers of bribes in Russia are the police – both regular police and traffic police. These results are presented in Table 3.6.3.

There is substantial variation between regions in the prevalence of corruption in these various government structures. This is explored briefly in Figure 3.7. The left plot shows the average in each of 65 regions of the extent to which respondents reported the police to

| | Proportion of Reported Bribes |
|---|---|
| Police | 0.441 |
| Traffic Police | 0.591 |
| Healthcare | 0.382 |
| Education | 0.267 |
| Courts | 0.222 |
| Voenkomat | 0.214 |
| Regional Authorities | 0.121 |
| Local Authorities | 0.186 |
| Housing and Communal | 0.106 |

be corrupt (on the x axis) and the extent to which regional and local authorities are corrupt (on the y axis). While no clear positive or negative correlation is present, the extent of regional variation in both measures is striking. In some regions, less than 20% of the public views regional and local authorities to be quite corrupt. In other regions, nearly 50% of the public sees these authorities to be corrupt. Similarly with the police, though the police are consistently viewed as more corrupt than are political authorities. The lack of correlation between these measures points to the relative independence of the police in Russia from regional politics – while certainly some control is exerted at the regional level, all regional police forces in Russia are under the jurisdiction of federal authorities in the Ministry of Internal Affairs.

**Figure 3.7:** Regional Variation in Bribe-Takers




In the right plot, we further can see the substantial variation in political and police corruption on the one hand and 'life' corruption (like in healthcare and education) on the other.

### 3.6.4 How do Russians Feel about Bribery, Bribe-Givers, and Bribe-Takers?

Are individuals' attitudes towards corruption – such as moral judgment of those who give bribes or those who take them – reflected in their actual corruption behavior? Table 3.8 suggests that indeed yes, those who claim to more harshly judge bribery in normative terms are less likely to participate in corruption. This association is appropriately much stronger

for those who say they negatively judge people who give bribes than for those who say they negatively judge bribe-takers.

**Table 3.8:** Judgment of Corruption

| | DV: Bribery Experience | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Male | 0.052*** | 0.052*** | 0.052*** |
| | (0.003) | (0.003) | (0.003) |
| Education | 0.023*** | 0.023*** | 0.022*** |
| | (0.002) | (0.002) | (0.002) |
| Age | −0.002*** | −0.002*** | −0.002*** |
| | (0.0001) | (0.0001) | (0.0001) |
| Income | 0.010*** | 0.010*** | 0.009*** |
| | (0.002) | (0.002) | (0.002) |
| Urban | 0.028*** | 0.028*** | 0.027*** |
| | (0.003) | (0.003) | (0.003) |
| Employed | 0.029*** | 0.026*** | 0.026*** |
| | (0.004) | (0.004) | (0.004) |
| Judge Bribetakers | −0.007** | | 0.024*** |
| | (0.003) | | (0.004) |
| Judge Bribegivers | | −0.046*** | −0.057*** |
| | | (0.003) | (0.004) |
| Constant | 0.147*** | 0.165*** | 0.157*** |
| | (0.014) | (0.015) | (0.015) |
| Number of regions | 74 | 74 | 74 |
| Number of years | 2 | 2 | 2 |
| N | 63,314 | 61,897 | 60,156 |

Standard errors shown in parentheses; all models are linear non-nested multilevel. Individual-level predictors male, age, education, urban, income, employed not shown.

Who views corruption – in general – as a very important phenomenon to fight among the many possible ills befalling modern Russia? In Tables 3.9 I examine the individual-level determinants of viewing corruption as important. In each model, the dependent variable is a dichotomous variable capturing whether or not the respondent chose corruption as one of the three responses from a list of possible factors that could be important.

As one would expect, having personally experienced bribery makes one much more

**Table 3.9:** Importance of Corruption

| | Corruption as Important | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Male | 0.070*** | 0.065*** | 0.063*** | 0.059*** | 0.066*** |
| | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Education | 0.032*** | 0.030*** | 0.030*** | 0.027*** | 0.028*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Age | 0.0004*** | 0.001*** | 0.001*** | 0.0004*** | 0.001*** |
| | (0.0001) | (0.0001) | (0.0001) | (0.0001) | (0.0001) |
| Income | 0.019*** | 0.018*** | 0.021*** | 0.019*** | 0.014*** |
| | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Urban | 0.033*** | 0.032*** | 0.030*** | 0.030*** | 0.030*** |
| | (0.003) | (0.004) | (0.004) | (0.004) | (0.004) |
| Employed | 0.004 | 0.002 | 0.002 | 0.001 | 0.003 |
| | (0.004) | (0.004) | (0.004) | (0.004) | (0.004) |
| Bribe Experience | | 0.079*** | 0.076*** | 0.077*** | 0.077*** |
| | | (0.004) | (0.005) | (0.005) | (0.004) |
| Approval of Governor | | | −0.024*** | | |
| | | | (0.004) | | |
| UR Voter | | | | −0.031*** | |
| | | | | (0.004) | |
| Liberal Voter | | | | 0.034** | |
| | | | | (0.014) | |
| Communist Voter | | | | 0.014** | |
| | | | | (0.006) | |
| Use Internet | | | | | 0.026*** |
| | | | | | (0.004) |
| Constant | 0.040** | 0.028 | 0.042* | 0.068*** | 0.009 |
| | (0.019) | (0.021) | (0.023) | (0.023) | (0.022) |
| Number of regions | 74 | 74 | 74 | 74 | 74 |
| Number of years | 2 | 2 | 2 | 2 | 2 |
| N | 69,799 | 67,943 | 57,526 | 61,399 | 67,943 |

Standard errors shown in parentheses; all models are linear non-nested multilevel. Individual-level predictors male, age, education, urban, income, employed not shown.

likely to view corruption as important. Holding pro-regime views, conversely, is associated with being less likely to see corruption as a problem. Frequent use of the internet has a positive and statistically significant, if small, effect.

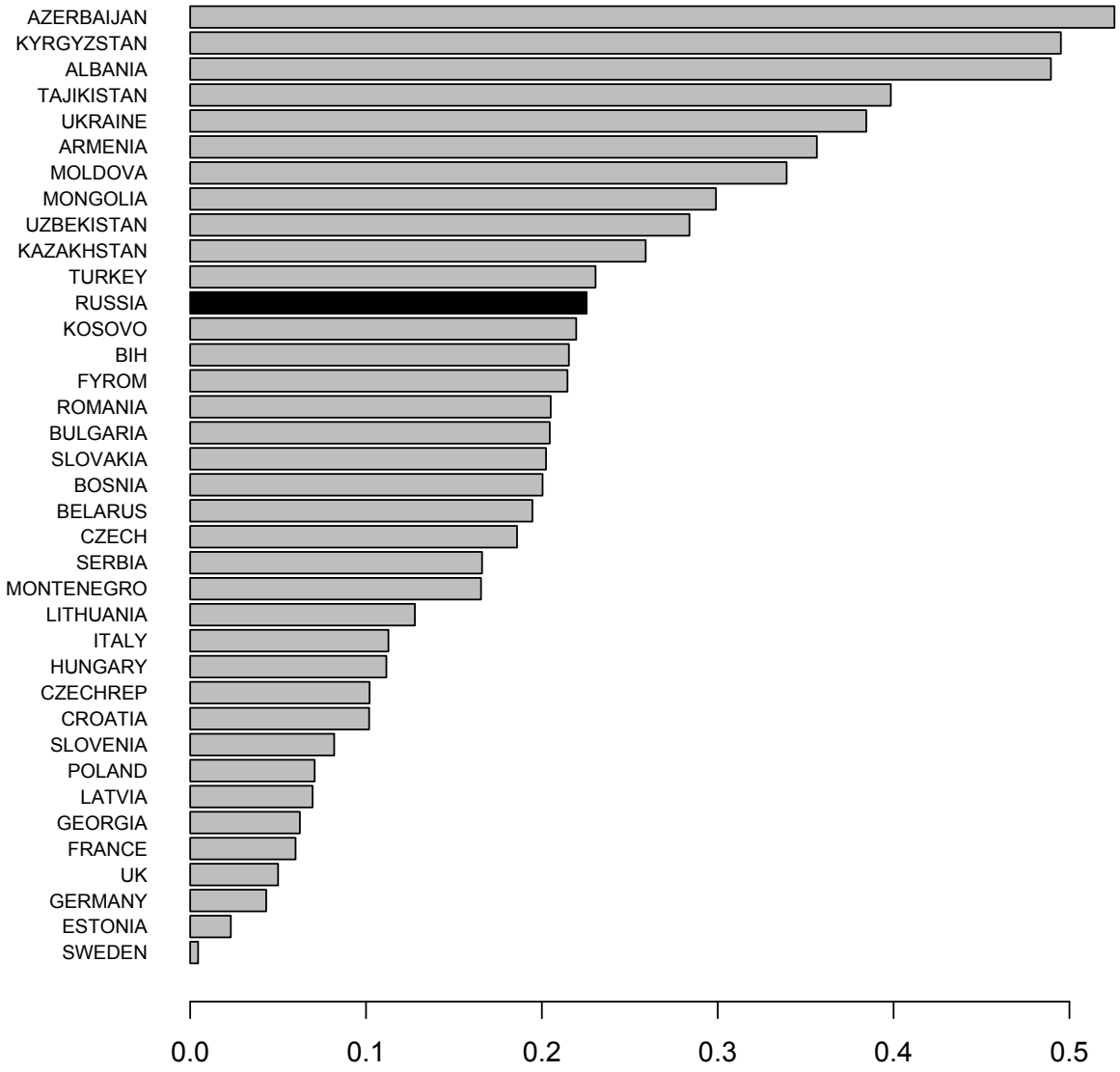
While the level of regional democracy is substantially related to viewing corruption as important (this variable is standardized, so the coefficient represents the change in the dependent variable as a result of a 1 standard deviation change in regional democracy),

the interaction of regional democracy and personal bribery experience is not statistically significant.

### 3.6.5 Comparing Russian Bribery to Post-Communist Bribery

How does the corruption experienced by the Russian public compare to that experienced by publics in other post-communist countries? This can inform our understanding of the variation *within* Russia while also providing context for the individual- and demographic-related results presented earlier. If Russians' bribery experiences are abnormal, for example, by carefully comparing and contrasting these countries we can better comprehend the variation we see between Russian regions and also between Russian individuals. In this section I show data on bribery experiences using the cross-national Life in Transition Survey (LiTS). This survey was conducted in 27 post-communist countries in 2006 and 2010. I pool these survey waves.

**Figure 3.8:** Country Average Bribery, LiTS




**Note:** Data come from the Life in Transition Surveys (LiTS) by the EBRD. Shown are the mean proportion of respondents in each country reporting having given a bribe.

In Figure 3.8, we can see that Russians' experiences with corruption are in fact quite average among post-communist countries in this time period.

Table 3.10 shows the results from two multilevel regressions. These regressions are identical in the predictors they include. The first model is on Russian survey responses alone. It shows results within Russia, taking the second level of the multilevel model as the Russian regions included in the LiTS survey. The second model shows a full cross-national regression, ignoring variation within Russia.

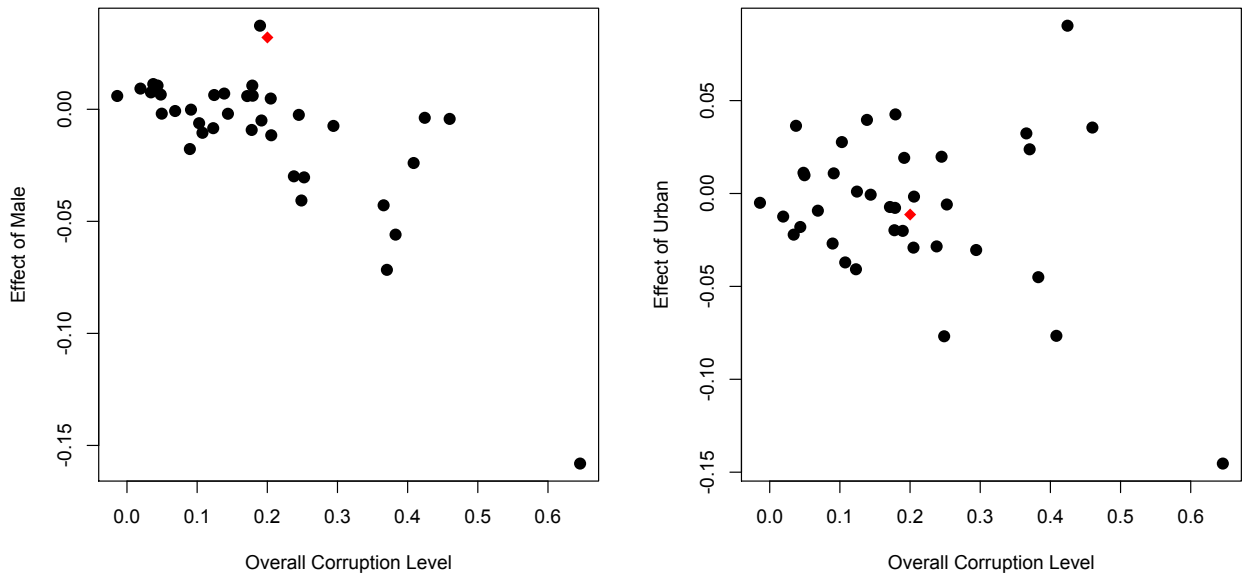
**Table 3.10:** Cross-National Correlates of Bribery Experiences (LiTS)

| | DV: Bribery Experience | |
|---|---|---|
| | (1) | (2) |
| Male | $0.040^{**}$ | $-0.011^{***}$ |
| | (0.017) | (0.003) |
| Education | 0.005 | $-0.006^{*}$ |
| | (0.024) | (0.003) |
| Age | 0.010 | $0.012^{***}$ |
| | (0.009) | (0.002) |
| Income | $-0.022^{**}$ | $-0.024^{***}$ |
| | (0.009) | (0.002) |
| Urban | 0.003 | $0.006^{***}$ |
| | (0.012) | (0.002) |
| Constant | $0.203^{***}$ | $0.196^{***}$ |
| | (0.043) | (0.022) |
| Number of units | 51 | 37 |
| N | 2,277 | 64,419 |

$^{+}$p $<$ .1; $^{*}$p $<$ .05; $^{**}$p $<$ .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

We can see that the demographic results are very similar, with notable exceptions. Income, age, and education are found to have similar (positive, negative, and positive, respectively) associations within Russia and across countries. However, the effect of gender and urban residency are starkly different. Figure 3.9 explores these findings by showing the random coefficients for each country; Russia is highlighted in each plot as a red diamond.

**Figure 3.9:** Russian Corruption in Relation to other Post-Communist Corruption, LiTS




It is clear from the left plot that Russia is a rather extreme outlier in the extent to which being a man is associated with much greater experiences with corruption. On the other hand, the right plot shows that Russia is in the middle of the pack in terms of the effect of urban residency. In Russia *on average*, the effect of being an urban resident on experiencing corruption is slightly negative. But, as we saw in Table 3.10, looking at Russia alone, urban residents very weakly experience more corruption than do rural residents.

## 3.7 Conclusion

In this chapter, I have introduced the core individual-level data set that I will use in subsequent empirical chapters to test my theory of how political competition, measured primarily

as scheduled ends of terms in office of Russian governors, affects the amount of corruption that the public experiences in their day-to-day lives. The use of this data set, more extensive and detailed than is generally available for studying corruption, allows me to confidently examine subnational variation in petty bribery in Russia over a substantial time span. In Chapter 4, I use multilevel models to show that political competition sharply reduces the amount of corruption that Russians experience. I also employ this data set, in combination with publicly available Russian census data to generate high-quality descriptive estimates of regional experienced corruption levels using a developing technique called multilevel regression and poststratification (MRP).

I have also endeavored in this chapter to show descriptive details and empirical trends in petty corruption as it is experienced by Russians today. This provides useful context for understanding what exactly is happening when graft seeps in to relations between citizens and the state. Chapter 6 further explores the *consequences* of these interactions. There, I exploit another advantage of this individual-level data set on bribery by showing that Russians overwhelmingly react negatively to experiences with corruption. This has potentially dire consequences for governors if they do not curtail corruption when they risk losing their jobs.

# 4 | Political Competition and Corruption: Empirical Evidence

In Chapter 2, I presented my theory of how political competitiveness decreases corruption in authoritarian regimes and the data available to test this theory. In this chapter I conduct a number of statistical tests on propositions that flow from this theory. I first introduce my measurement strategy for exogenously assessing political competition shocks in Russian regions. From this I build and describe my research design, which combines this measure of political competition, the extensive survey data set introduced in Chapter 3, and multilevel regression. I provide regression results that test my theory. I also lay out a series of robustness tests, alternative measures, and discuss some implications of my findings.

Where previous research has generally relied on perceptions data about corruption, cross-national assessments that gloss over much underlying variation, and potentially endogenous measures of competition. I look within Russia from 2001 to 2016, comparing the varied levels of competition and corruption that are found in what may be thought of as

'miniature' authoritarian regimes under the thumb of the central Moscow regime. While this empirical strategy, as any does, comes with limitations, such as limitations to external validity, it allows me to gain a new and powerful view into the workings of corruption in authoritarianism.

## 4.1 Research Design

The research design I employ in this chapter is built around three advancements to much of the existing research on corruption or political competition: an exogenous measure of competitiveness, individual-level data nested within regions and years, and the capability of multilevel modeling to include time-varying and time-invariant covariates at individual and aggregate levels to increase variance explained and automatically 'pool' information as the data demands. In the first case, the availability of plausibly exogenous shocks to political competitiveness (scheduled ends of terms in office) allows me to avoid concerns of reverse causation and confounding that are often encountered when explaining political variation using competitiveness as a predictor. In the second, the use of micro-level survey data increases confidence in the validity of the dependent variable while allowing for flexible data exploration and modeling. Finally, while remaining robust to alternative approaches such as fixed effects modeling, the use of multilevel (random effects) models allows these datasets to 'speak for themselves' as to the amount of pooling of information over time and space that is required, while allowing for covariates of interest to be included without concerns of time invariance.

### 4.1.1 Measuring Competition: Scheduled End of Term

As the end of an authoritarian leader's term approaches, rising political competition can have two effects on petty corruption. First, as political exigencies rise to the fore, machines previously focused on collecting and distributing corruption rents find their attention turned to these time-sensitive matters: driving the vote for the incumbent and keeping the public happy. Second, the bureaucrats themselves—the cogs in the machine—keep their head down until calmer waters return and the winner of the political contest becomes clear.

An important challenge for empirical tests of political features like competitiveness is measurement. Measurement of competitiveness should be maximally exogenous, in order to properly identify the effect of competitiveness on the outcome of interest and to not become entangled in reverse causation. It also must be valid—homing in on competitiveness itself rather than other related factors. In the present study I employ a measure, scheduled end of term in office, which meets both of these criteria.

The exogeneity of *Scheduled End of Term* is derived from the nature in which the electoral calendar in Russia's regions was determined. In the early post-Soviet period, from 1991 to 1996, heads of Russian regions were elected sporadically and with little consistency either within or across regions, with most governors being appointed ad hoc by the Russian president. A large number of regions then held elections in 1996, after a Constitutional Court decision and passage of a law required heads of regions to be popularly elected. Regions were allowed to set lengths of term in office of 4 or 5 years and to hold their elections on any date. This marks the beginning of a messy electoral calendar across Russia's many regions. A significant change came in 2004, when President Putin signed a law abolishing

elections for these governors. Coming into force in 2005, this law solidified and codified the 'electoral' calendar into a set of predetermined appointment terms.[1] A further law signed by President Medvedev in 2012 returned the practice of electing governors, though with substantial presidential control over the nominating process.[2] To a great extent, the governors in this data set are still appointed rather than elected.

In both the electoral periods (1996-2004, 2012-2016) and the appointment period (2005-2011), the approaching end of a governor's term in office is occasion for sharply increased political competitiveness and uncertainty. In electoral periods, pretenders to the office frequently arise from both within the governor's party and from without. Powerful business groups, once-loyal lieutenants, and popular mayors of large cities in the region all vie to win what is a prominent and lucrative position. The sitting governor must fend off challengers using his political machine and administrative resources. In the appointment period, this competitiveness and uncertainty did not diminish. The president often used the end of term period as a time to maneuver, create intrigue about favored choices, and collect information about who within the region's elite (or, if intra-region elites are found to be severely lacking, outside elites) will best serve his goals. This is in some ways exemplified by the much-discussed complex system of ratings of the 'effectiveness' of governors,

[1]Note that neither of these modifications to governors' selection mechanisms—the switch to gubernatorial appointments and the return to "managed" elections—entailed any changes to each region's original calendar. Terms in office continued unaltered.

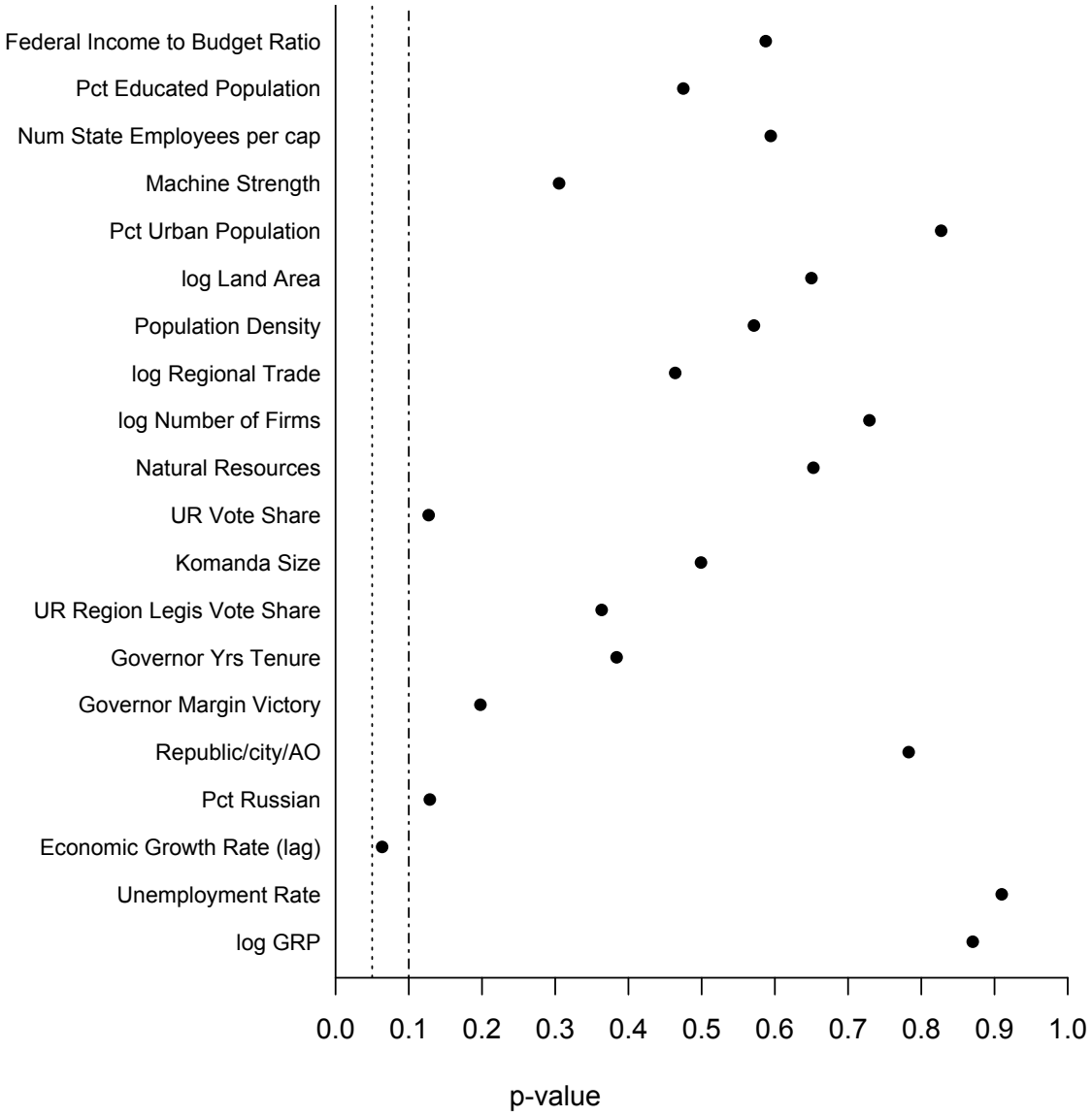
[2]Under this rather complex scheme, still in place in 2016, candidates for the post of governor must first be nominated by political parties, regional legislatures, or, occasionally, by self-nomination. This amounts to what is called the 'municipal filter' alongside an informal 'presidential filter' whereby the President meets with nominating groups and can exercise a sort of veto (Goode 2013). The effect is tight political control by Putin, United Russia, and other elements of the regime over who participates in gubernatorial elections. The end result is very close to appointment, given Russia's political system.

used by the Presidential Administration in selecting appointees. Furthermore, the intra-elite jostling for power seen in electoral periods often continued unabated though less visible. One example among many is the rivalry between longtime governor of the Omsk region, Leonid Polezhaev, and upstart mayor of Omsk Viktor Shreider, which erupted into a full intra-party and intra-elite tussle in 2011.[3]

Figure 4.1 shows the results of balance tests—the statistical significance of tests with a set of 20 regional covariates. If region-years with a scheduled end of term differed strongly from those without a scheduled end of term, one might be concerned about the true exogeneity of this measure. The finding that none of the 20 covariates have statistically significant differences at the 5% level and only 1 does at the 10% level provides suggestive evidence that *Scheduled End of Term* is not associated with other region-year characteristics that might bias this study's results. Of course, such balance tests in principle cannot capture unobserved or unobservable differences between these region-years, but nonetheless they can be helpful for locating egregious violations of the identification strategy.

[3] http://www.rospres.com/government/9164/

**Figure 4.1:** Balance of Region-Years With and Without a Scheduled End of Term




Points represent the p-value from a t test of each covariate listed on the left with the scheduled end of term indicator dividing region-years in to treatment and control groups.

Table 4.1 provides descriptive statistics for the region-year variables, including Scheduled End of Term, that I employ in subsequent analyses.

**Table 4.1:** Descriptive Statistics: Region-Year Variables

| Variable | N | Min. | Max. | Mean | Median | #NA |
|---|---|---|---|---|---|---|
| Sched End of Term | 1424 | 0.00 | 1.00 | 0.26 | 0.00 | 92 |
| Petrov Competitiveness | 1417 | -2.39 | 3.11 | 0.00 | -0.03 | 99 |
| Log GRP | 1479 | 6.38 | 16.27 | 11.88 | 11.96 | 37 |
| Pct Russian | 1516 | 0.01 | 0.97 | 0.74 | 0.85 | 0 |
| Log Population | 1516 | 9.70 | 16.30 | 13.78 | 13.97 | 0 |
| Republic/City/AO | 1504 | 0.00 | 1.00 | 0.31 | 0.00 | 12 |
| Press Freedom | 1417 | 1.00 | 5.00 | 2.76 | 3.00 | 99 |
| UR Vote in National Elects | 1239 | -1.86 | 2.97 | -0.01 | -0.30 | 277 |
| Gov'r Margin Victory | 1222 | 0.20 | 4804.50 | 79.50 | 38.00 | 294 |
| Gov'r Yrs Tenure | 1034 | 0.00 | 20.00 | 6.83 | 6.00 | 482 |
| UR Vote in Regional Legis | 830 | 17.66 | 90.40 | 49.59 | 50.01 | 686 |
| Nat Resources | 1504 | 0.00 | 78.60 | 9.63 | 1.70 | 12 |
| Gov't Size | 928 | 1.00 | 101.00 | 33.56 | 33.00 | 588 |
| Official Turnover | 839 | 0.00 | 18.00 | 0.42 | 0.28 | 677 |
| Machine Organization | 1441 | -1.89 | 3.58 | 0.02 | -0.34 | 75 |

### 4.1.2 Statistical Modeling

In the Results section below, I present the analysis of this data using a series of linear multilevel models.[4] Multilevel modeling is perfectly suited to this unbalanced regional panel consisting of a large number of individual-level responses that can be grouped by region and year into second-level units (Shor, Bafumi, Keele, and Park 2007; Fairbrother 2014; Bell and Jones 2015). These units can then be modeled with region-year covariates, with

[4]For ease of interpretation I employ linear models in all analyses presented here, despite the dichotomous dependent variable. Out-of-bounds predictions and individual-level heteroskedasticity are not of great concern in the multilevel inference framework I employ. The results of running these analyses using logistic regression are available in the Robustness section. They show nearly identical findings.

inference made possible by examining the coefficients and standard errors of these region-year predictors.

In each model below I run a multilevel regression of my dichotomous dependent variable—corruption experience—on a set of individual-level demographic predictors and a number of region-year regressors.[5] The model I estimate is presented below as Equation 4.1. As this is a multilevel model, I allow the intercept of each model to vary (non-nested) by year and region. The dependent variable in all models is *Bribery Experience*, a dichotomous yes-no response to the question "Have you in the last year or two personally encountered a situation where any government official requested or expected an unofficial payment or service from you for his or her work?"

$$\Pr(y_i = 1) = \alpha^0 + \beta EndofTerm_{y,r} + \boldsymbol{\gamma}\mathbf{X}_{y,r} + \alpha^{region}_{r[i]} + \alpha^{year}_{y[i]} + \epsilon_i \quad (4.1)$$

$$\alpha^{year}_{y} \sim N(\eta, \sigma^2_{year}), \text{for } y = 1, ..., \mathrm{Y} \quad (4.2)$$

$$\alpha^{region}_{r} \sim N(\eta, \sigma^2_{region}), \text{for } r = 1, ..., \mathrm{R} \quad (4.3)$$

Where my main variable of interest, $EndofTerm_{y,r}$, is an indicator variable with coefficient $\beta$, $\mathbf{X}_i$ is the set of individual-level demographic variables with coefficient vector $\boldsymbol{\gamma}$, $\eta$ is a vector of region-year predictors, and $\alpha^0$ is the grand mean. Each model is linear OLS—i.e., a linear probability model—for ease of interpretation.

The results are also robust to linear fixed effects (no pooling) modeling of region and year instead of multilevel modeling, as shown in Table 4.6. The multilevel (also referred to

[5]Estimations conducted using *lmer()* in R. I have implemented the logit analyses shown in Table 4.6 using both *bglmer()* and Stan (via *rstanarm*) but the large data set makes this very time consuming and appears to offer no practical benefit.

as random effects or partial pooling) solution that I employ in this thesis offers a number of advantages over fixed effects (Bell and Jones 2015). In particular, it allows for the inclusion of region-level variables that change over time and those than do not. Multilevel modeling is a more flexible, data-centered modeling approach than fixed-effects modeling, which, when estimating parameter $\alpha_i$, does not allow for information about other units or the grand mean to be incorporated.

Multilevel modeling relies, as all statistical procedures do, on untestable assumptions. The most crucial for multilevel modeling is the assumption that there is no correlation between randomly varying parameters and the explanatory variables. However, it is important to note that corrections, due originally to Mundlak (1978), are available. I present results that apply these corrections in Appendix Table 10.3.

## 4.2 Results: Effect of Political Competition on Corruption

As discussed in previous chapters, in modern, competitive-authoritarian Russia, the end of a governor's term in office is a time that is weighted with risk and uncertainty. As a prominent political leader of his own authoritarian political machine, a governor must ensure that neither the public nor the 'appointer-in-chief' is dissatisfied with his tenure. If he has not provided the level of public goods that constituents expect, if seen as overly dirty or compromised, or if his machine has not been able to rally the support demanded by the regime, he may be removed. Whether replaced by the voting public in elections, however managed and sanctioned, or passed over for reappointment to his post, nerves run high. As the last months of a governor's term approach, he faces an increasingly competitive political arena. Rivals emerge, allegiances are tested, and machines of support are revved up.

I first show how political competition, measured using an indicator for a governor's term scheduled to end in a given year and region, *Scheduled End of Term*, affects average levels of corruption that the public experiences. In Table 4.2, I show the results from multilevel linear regressions.[6] The first six covariates, not shown in this table but presented in the appendix, capture individual-level characteristics of the respondents: gender, education level, age, income, urban or rural location, and employment status.[7] All variables other than these six are region-year variables, such as scheduled end of temr, entered in the second-level of the multilevel model. All models allow the intercept to vary by region and year, also referred to as region and year random effects.

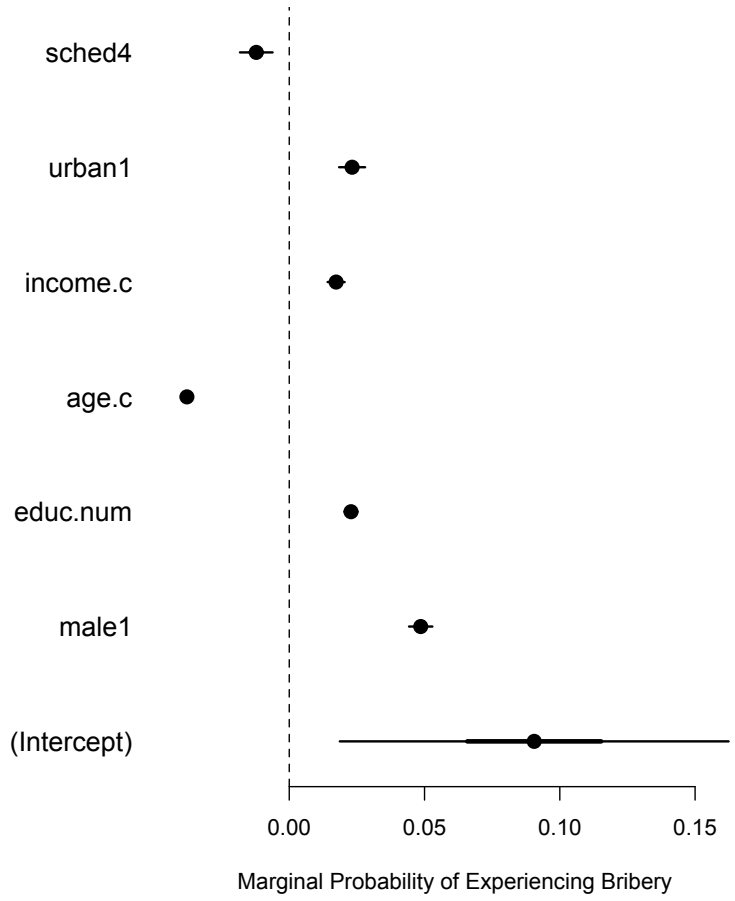
Column 1 shows the raw effect of being in a year with a scheduled end of term in office on regional experienced bribery levels.[8] In these years, average corruption levels drop by about a half of a percentage point. Column 2 includes a variety of region-year covariates, with the effect of *Scheduled End of Term* unchanged. Since, as discussed earlier, my theory is assumed to work most cleanly in appointment periods (rather than the gubernatorial election period through 2004), Columns 3 and 4 reproduce columns 1 and 2, excluding the

[6]Multilevel logistic regressions are shown in the appendix. These show nearly identical results to the linear regressions I present in this thesis. I show linear results for ease of interpretation.

[7]These individual-level variables are also omitted from presentation in subsequent tables, though they are present in the analyses. Their values and statistical significance are highly stable, regardless of what other variables are included.

[8]As discussed elsewhere, as the *scheduled* end of a governor's term in office is set far in advance by legislation or chance timing, it is exogenous to both other regional characteristics (including political features of the region) and to individual-level factors. This exogeneity ensures that it is not corruption experiences that are driving political competition, nor is there other confounding occurring at the region level. While the nature of *Scheduled End of Term* satisfies the ignorability assumption required for causal inference in this case, nevertheless Column 2 includes additional region-year covariates.

**Figure 4.2:** Determinants of Corruption Experiences: Scheduled End of Term and Demographics




years 2001-2004. The results are stronger, with larger effect sizes that are more precisely estimated.

In all models, *Scheduled End of Term* shows a negative and statistically significant effect, indicating that in times of heightened political competition for Russia's regional autocrats, petty bribery is lowered substantially.[9] I provide additional evidence below that this

[9]Chapter 5 explores this finding more deeply by examining the conditional (heterogeneous treatment) effects of scheduled end of term on corruption levels. The results shown there also provide

**Table 4.2:** Political Competition and Experienced Corruption: Main Results

| | DV: Bribery Experience | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Sched End of Term | −0.005* | −0.005** | −0.012*** | −0.013*** |
| | (0.003) | (0.003) | (0.003) | (0.003) |
| Log GRP | | −0.017** | | |
| | | (0.008) | | (0.010) |
| Pct Russian | | −0.081* | | −0.100** |
| | | (0.046) | | (0.050) |
| Log Population | | 0.027** | | 0.025* |
| | | (0.012) | | (0.013) |
| Republic/City/AO | | −0.025 | | −0.024 |
| | | (0.022) | | (0.023) |
| Constant | 0.116*** | 0.015 | 0.091** | −0.042 |
| | (0.036) | (0.122) | (0.037) | (0.133) |
| Number of regions | 78 | 77 | 77 | 76 |
| Number of years | 12 | 12 | 9 | 9 |
| N | 143,264 | 142,558 | 106,816 | 106,110 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

effect is tied to deliberate control over corruption. The linear coefficient on *Scheduled End of Term* is -0.005, showing that in a region with a governor's term scheduled to end in that year, the probability of any given member of the public experiencing bribery is reduced by half of 1 percentage point. This effect is equivalent to approximately a 5% decrease in the overall level of bribery experienced in that region. This results in many thousands fewer corruption events per year. Columns 3 and 4 show the models from Columns 1 and 2, but limited to a subset of the data: those region-years where the governor was appointed by the

a conceptual check that strongly supports my interpretation of the findings in the present chapter as confirmation of the theoretical mechanisms described in Chapter 2. If governor characteristics, for example, had no effect on the competition-corruption relationship or an effect other than what is predicted, that would indicate that an alternative explanation for my main results is at work. I do not find this to be the case.

president rather than elected. In these years where governors are appointed by the autocrat rather than elected, we see a yearly decrease in corruption of over 13% when the governor's term is ending.

**Table 4.3:** Political Competition and Experienced Corruption: Interaction with 'Baseline' Competition

| | DV: Bribery Experience | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Sched End of Term | | | 0.003 |
| | | | (0.003) |
| Petrov Competitiveness | −0.017*** | −0.017*** | −0.012*** |
| | (0.003) | (0.004) | (0.004) |
| Petrov X Sched End Term | | | −0.020*** |
| | | | (0.003) |
| Log GRP | | −0.008 | |
| | | (0.008) | |
| Pct Russian | | −0.081* | |
| | | (0.046) | |
| Log Population | | 0.024** | |
| | | (0.012) | |
| Republic/City/AO | | −0.033 | |
| | | (0.022) | |
| Constant | 0.119*** | −0.051 | 0.118*** |
| | (0.036) | (0.122) | (0.036) |
| Number of regions | 78 | 77 | 78 |
| Number of years | 12 | 12 | 12 |
| N | 143,254 | 142,558 | 143,254 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

In Table 4.3, I show that political competitiveness as measured by the Petrov score—an alternative, expert assessment-based measure of competitiveness levels rather than dynamics, discussed at length in the next section—is strongly associated with lower corruption levels. In fact, a region two standard deviations above average on the Petrov competitiveness scale is estimated to display more than three percentage points less corruption per year,

an approximately 20% change in corruption levels. What is more, as shown in Column 6, competitive regions (on the Petrov scale) show even greater effects of *Scheduled End of Term* – a very competitive region two standard deviations above the mean will see an *additional* four percentage point drop in corruption levels in years with a scheduled end of term. This suggests that already competitive regions—where governors are ill-at-ease—are particularly susceptible to further shocks to their competitiveness.

Employing both a plausibly exogenous measure of a positive shock to political competitiveness—the final year of a term in office for a Russian governor, a time when he is assessed by the autocrat and most easily fired for excessively high levels of corruption—and a widely-used assessment of relative levels of regional political competitiveness—the Petrov-Titkov 'democracy' score—I have found that governors are responsive to competition. When political competition is high, they reduce corruption in order to keep the public sufficiently happy (explored further in Chapter 6). This, in turn, helps keep the autocrat, who is monitoring governors' performance especially in these years, satisfied with the governor's work and thus more likely to reappoint him. I find effects of political competition of substantial magnitude—over 10% decreases in petty corruption per year—and consistent statistical significance. I address potential concerns that unrelated region-level factors may be at play or that individuals' demographics are behind my findings by including a large array of additional covariates. Further examination of the robustness of my findings follows in Section 4.3.

One potential empirical implication of this finding (and the theory it provides confirmatory evidence for) is that, *ceteris paribus*, governors who do not lower corruption levels in the final years of their terms in office should be reappointed much less frequently than

those who successfully reduce graft. I do not test this proposition in this dissertation. Such an event can be thought of as occurring 'off the equilibrium path' in the sense that those governors who are being replaced failed to follow what they were incentivized to do. This means that it would be difficult to interpret *any* result from such a test: a null result may strongly confirm that governors stay on this equilibrium path or it may indicate a simple statistical failure to reject a null hypothesis, while a result that governors are being replaced either more or less frequently than expected also does little to confirm or disconfirm the theory. Furthermore, these difficulties are made worse by severe limitations of the available data. Few governors in Russia are replaced, but the reasons they can be replaced are legion. Such replacements are often overdetermined, so a full investigation would require strong assumptions about how numerous other factors are playing into both replacement and the corruption-replacement relationship.

### 4.2.1 Interpretation

I interpret the findings in this chapter as showing an active link from governors' incentives to governors' behavior to corruption levels as experienced by the public. At least three pieces of evidence support this interpretation over other possible alternatives.[10] First, the following chapter, Chapter 5, uses exploration of conditional (heterogeneous) effects to show that this interpretation better fits the data at hand than do other interpretations that would need to explain those findings as well. Second, the following section, Section 4.3, tests the

[10]Such alternatives include interpretations involving other, more complex causal pathways whereby governors change some other behavior in end-of-term years and that behavior has an unintended side effect of reducing corruption. Another possibility would be that the survey-taking public in these years reacts to political or social changes and responds to surveys differently.

robustness of these conclusions to a wide array of alternative specifications. That the central findings hold is supportive of the mechanisms I propose over the alternatives these covariates and modeling strategies would entail. Finally, additional support for the interpretation If, as proposed in Chapter 2, Russian governors use various levers under their control to decrease corruption in end-of-term years, then a lesser effect should be observed for bribery in areas that the governor has *limited control over bureaucracies* than those where he has *greater, more direct control*. We find such a situation for the police when compared to provision of government social services, respectively. Police and law enforcement structures in modern Russia are nominally federal agencies, with governors having little leverage over their work.[11] On the other hand, the documents and permits that constitute another large portion of corruption situations in Russia are generally parts of the regional administrative bureaucracy, where the governor has clear hierarchical leverage.

[11] In practice, of course, governors can have substantial influence on police activity. This influence may vary from place to place. The key is that their influence is dramatically weaker and less direct than on state organs that fall under their regional administration. I propose that this is indeed the case.

**Table 4.4:** Effects of Competition on Structures under Governors' Control (2016 data)

| | Bribery Experiences with... | | |
|---|---|---|---|
| | All Bribery Experiences | ...Police | ...Government Services |
| | (1) | (2) | (3) |
| Sched End of Term | −0.066 | −0.054 | −0.118* |
| | (0.056) | (0.045) | (0.068) |
| Constant | | | |
| Number of regions | 47 | 47 | 47 |
| Number of years | | | |
| N | 1,199 | 1,256 | 1,256 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

Only one of the surveys comprising my main data set includes evidence about to whom bribes were given, the final survey conducted in early 2016 in 47 regions by the Levada Center at the behest of the present author and colleagues. In Table 4.4 I show that end of term does have a much larger effect on regional administrative corruption than on police corruption, thus lending additional credence to the assumptions underlying my overall findings.

## 4.3 Robustness

Familiar difficulties with measuring corruption underline the importance of testing the robustness of the findings presented above. In this section, I discuss potential sources of bias in survey measures of corruption, show analyses using alternative measures of political competition in Russia, and also provide additional measures of corruption, including observational and novel search engine-based measures.

### 4.3.1 Controlling for Attitudes

The findings presented in this study are built on multilevel regressions where the fundamental unit of observation is the individual. As such, it is worthwhile to ensure that stark differences between respondents are not driving the effect of political competitiveness depressing reported corruption. While the exogeneity of the *Scheduled End of Term* variable ensures that the results would remain valid if this were the case, nevertheless it is useful to show that survey responses indicating having had an experience with corruption are clear and valid measures of having actually experienced that corruption, rather than unrelated factors like attitudinal willingness to report.

One particularly salient concern is that survey respondents who are opponents of the regime may be less willing to report corruption experiences. If this were the case, potential bias emerges if this willingness to report is differential across competitive and non-competitive regions. As discussed in the previous chapter, there is no reason to believe that this is the case, as Russians are quite willing to discuss this topic, especially when the question wording allows for substantial plausible deniability. Furthermore, this objection fully fails to explain why respondents in regions that happen to be in the final year of their governors' terms in office would exhibit differential response. Nevertheless, with some data limitations in mind, in Table 4.5 I control for some individual attitudes and characteristics that address this possibility and others.

Table 4.5 shows Column 1 of Table 4.2 with a series of additional individual-level covariates added. This task of controlling for additional factors is difficult, since many of the relevant questions are asked only in a few survey waves, creating problems with missing

**Table 4.5:** Additional Individual Covariates

| | DV: Bribery Experience | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Sched End of Term | −0.015*** | −0.008** | −0.007 | −0.006* | −0.023*** |
| | (0.003) | (0.003) | (0.005) | (0.003) | (0.005) |
| Internet User | 0.068*** | | | | |
| | (0.003) | | | | |
| Gov'r Approval | | −0.030*** | | | |
| | | (0.002) | | | |
| Putin Approval | | | −0.054*** | | |
| | | | (0.003) | | |
| UR Supporter | | | | −0.029*** | |
| | | | | (0.002) | |
| Judges Bribe-Givers | | | | | −0.047*** |
| | | | | | (0.003) |
| Constant | 0.104*** | 0.055** | 0.152** | 0.056** | 0.083*** |
| | (0.035) | (0.025) | (0.072) | (0.023) | (0.017) |
| Number of regions | 75 | 76 | 75 | 76 | 74 |
| Number of years | 6 | 4 | 3 | 4 | 2 |
| N | 99,209 | 106,572 | 57,997 | 108,153 | 62,212 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

data. For this reason, Table 4.5 shows the addition of each covariate one at a time. The problem of missing data in some cases drastically decreases the sample size. That fact, taken with the post-treatment nature of these survey questions, make these findings suggestive. Nevertheless, *Scheduled End of Term* shows a negative and, in all but one regression, statistically significant effect on corruption levels. This provides substantial additional evidence that political competition, such as that found at the end of electoral terms in office, does indeed diminish petty corruption.

### 4.3.2 Modeling

I have chosen to use linear multilevel regression, implementing the linear probability model, in analyses throughout this dissertation. Aside from drastically eased interpretability of the results, the linear probability model avoids a distributional assumption about the shape of the distribution of the outcome variable and is much more computationally stable (a particular concern with the large data sets and complex multilevel models used here). Moreover, the typical objections to the use of the linear probability model when the outcome variable is dichotomous are of very minimal concern in this case. As I am not engaged in a prediction exercise, out-of-bounds predictions are not a worry. Heteroskedasticity is similarly not a significant problem when the error structure is as highly modeled as it is when using multilevel models. Nevertheless, in this section I demonstrate the robustness of my findings to alternative modeling approaches: logistic multilevel regression and linear fixed effects modeling.

In Table 4.6 I reproduce selected regressions from Table 4.2, employing logistic regression in place of linear regression. Columns 1 and 2 show that the scheduled end of term variable maintains its negative and statistically significant coefficient when the dependent variable is modeled using a logistic distribution. This is the case for a wide variety of specifications, including robustness to additional controls (not shown).

In Column 3, I conduct a linear fixed effects (within) regression in place of multilevel modeling. In this no-pooling case, I am not able to include other region-year controls without introducing potential multicollinearity. The coefficient on the scheduled end of term variable is of smaller magnitude and loses some statistical significance, but the findings do not argue

**Table 4.6:** Political Competition and Experienced Corruption, Alternative Modeling

| | DV: Bribery Experience | | |
|---|---|---|---|
| | Logistic Multilevel | | Linear Fixed Effects |
| | (1) | (2) | (3) |
| Scheduled End of Term | −0.053** | −0.056*** | −0.005* |
| | (0.021) | (0.021) | (0.003) |
| Male | 0.318*** | 0.318*** | 0.040*** |
| | (0.015) | (0.015) | (0.002) |
| Education | 0.249*** | 0.249*** | 0.028*** |
| | (0.009) | (0.009) | (0.001) |
| Age | −0.356*** | −0.356*** | −0.044*** |
| | (0.008) | (0.008) | (0.001) |
| Income | 0.148*** | 0.146*** | 0.025*** |
| | (0.011) | (0.011) | (0.002) |
| Urban | 0.219*** | 0.218*** | 0.026*** |
| | (0.019) | (0.019) | (0.002) |
| Log GRP | | −0.083 | |
| | | (0.071) | |
| Pct Russian | | −0.587* | |
| | | (0.343) | |
| Log Population | | 0.163* | |
| | | (0.099) | |
| Republic/City/AO | | −0.160 | |
| | | (0.163) | |
| Constant | −2.316*** | −3.109*** | 0.325*** |
| | (0.266) | (0.933) | (0.029) |
| Number of regions | 78 | 77 | |
| Number of years | 12 | 12 | |
| N | 143,264 | 142,558 | 143,264 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses
Individual-level predictors male, age, education, urban, income not shown.

against my general findings that scheduled end of term years are times when governors decrease petty corruption.

## 4.4 Alternative Measures

In this section I provide the results of analyses that employ alternative measures of both my dependent variable, having experienced bribery, and political competition, my key independent variable. While, for reasons explained earlier, neither the reliability nor the validity of the dichotomous self-reported measure of corruption experience that I use is under substantial question, the use of survey-based evidence in general may come with some challenges. In particular, these results are to some extent beholden to a fixed, specific question wording, as well as to decisions about sampling and interviewing that are beyond my control as a researcher. Regarding the measure of political competitiveness I have used, scheduled end of term, there may be concerns that the exogeneity that it brings is bought with a substantial amount of conceptual narrowing and limited external validity. In this section I loosen all of these restrictions by introducing alternative measures for these variables.

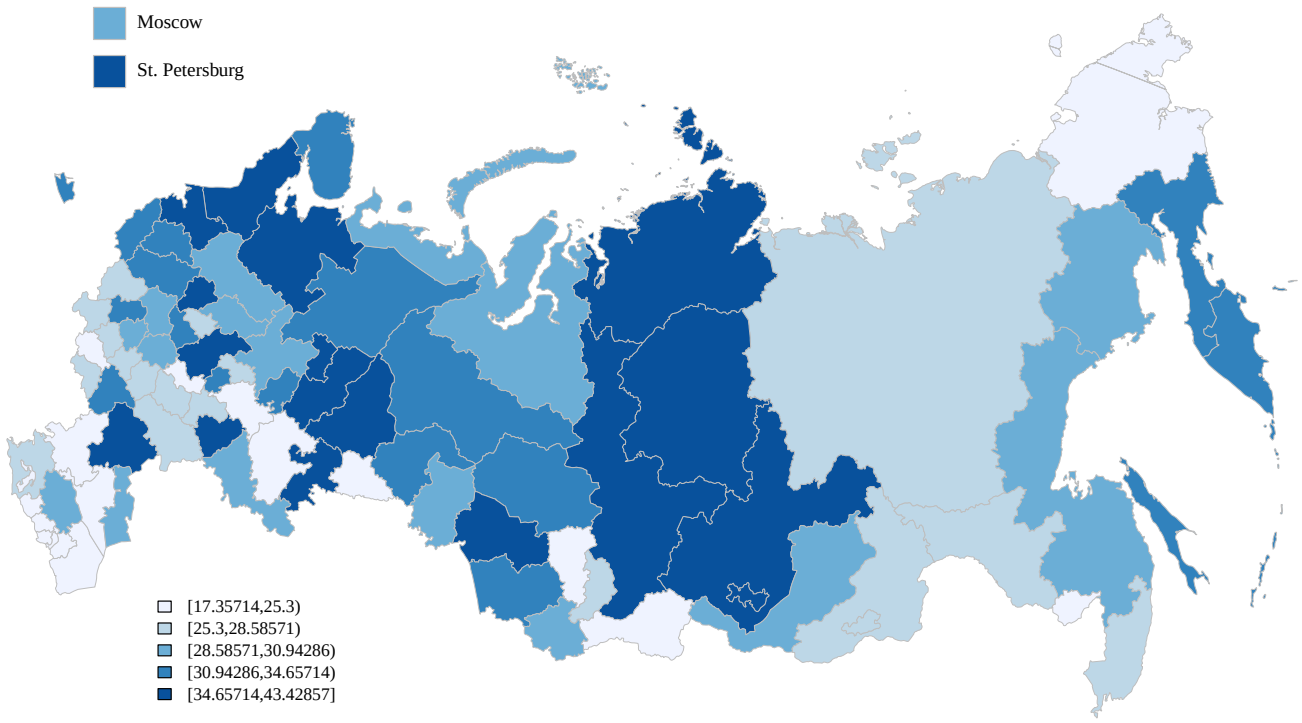
### 4.4.1 Alternative Measures of Competition

By its nature, *Scheduled End of Term* is a highly dynamic, quickly-varying measure of competitiveness (see Beazer 2015). This has advantages, such as the ease of locating the effects of such fast-changing variables, but also disadvantages, since it does not pick up the background differences in competitiveness that are present across regions. For this reason I also employ an alternative variable, *Petrov Competitiveness*, an extensively-used measure of regional political competitiveness in Russia (Petrov and Titkov 2013). This measure is frequently used to proxy for the degree to which Russia's regional political regimes are, at one end of the scale, uncompetitive and strongly autocratic, versus, at the other end,

'hybrid,' competitive, and relatively more democratic (Sharafutdinova 2012; Buckley, Reuter, Shubenkova, and Garifullina 2015; Reuter and Buckley 2016).[12] I employ a centered and standardized form of this variable in regressions in order to improve the computational stability of complex multilevel models. In order to get a sense of the variation between regions within this measure, Figure 4.3 shows a map of this variable in 2010 for each region, along with a histogram of these values.

[12]The Petrov-Titkov variable is composed of a number of subcomponents, each ranging from 1 to 5, with higher values indicating more liberal, democratic, competitive regime along that dimension. In this thesis, I choose the subcomponents that most closely fit the regime characteristic I am interested in, namely, the extent to which regional politics are uncompetitive and strongly centered around a consolidated political machine. To this end I build an additive index from the following subcomponents: pluralism, liberalization, political structure, elite competitive, local self-governance, and openness (Petrov and Titkov 2013; Reuter et al. 2015). The resulting variable, *Petrov Competitiveness*, ranges from 9 (least competitive) to 28 (most competitive).

**Figure 4.3:** Regime Competitiveness by Region, 2010




**Note:** This chloropleth shows the 2010 values of the Petrov-Titkov 'democracy' score for each region.

Several additional commonly-employed measures of political competitiveness within an authoritarian regime present themselves.[13] First is a measure of the share of the vote won by United Russia in the most recent elections for the regional legislature.This measure has been employed by numerous researchers and is an intuitive way of assessing how dominant United Russia is in regional politics (Sharafutdinova 2006; Buckley and Reuter 2016;

[13]See Chapter 5 for further exploration of some of these variables, including effects conditional on high and low levels of these variables.

Lankina and Getachew 2006; Akhmedov and Zhuravskaya 2004) . Where UR dominates the legislature, the political sphere is less contested and so the threat of political competition recedes into the background. Where UR is weak, politics is uncertain and the autocrat is likely to be wary of allowing excessive corruption or discontent in such a contested context.

### 4.4.2 Results with Alternative Measures of Political Competition

First, in Table 4.7, I show that measuring political competition using several alternative conceptions bears out the findings presented in earlier sections. First, in Column 1, greater press freedom is actually associated with higher levels of corruption. This rather surprising result may indicate that, in regions with more press freedom, the media more frequently reports on bribery, thus increasing its salience in the minds of survey respondents. This finding is entirely opposite from that which would be expected if press freedom were a proxy measure for greater political competitiveness. In Column 2, the null hypothesis that regions that produce a greater share of the vote for the dominant party, United Russia (UR), in national elections (and so are less competitive) feature greater corruption is not rejected.

In Columns 3-5 we see that three commonly-used alternative measures of competitiveness—the margin of victory of the governor of the region (if he is elected and not appointed), the years of tenure in office for the governor, and the proportion of the vote received by UR in elections to the regional legislature—all show expected positive and statistically significant coefficients. All three variables are measures of lack of competitiveness, since greater values indicate regions governors are stronger or where UR is particularly dominant. Thus these regions are less politically competitive and exhibit greater corruption than competitive

**Table 4.7:** Alternative Measures of Competition

| | DV: Bribery Experience | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Press Freedom | 0.016*** | | | | |
| | (0.004) | | | | |
| UR Vote in National Elects | | −0.004 | | | |
| | | (0.003) | | | |
| Gov Margin Victory | | | 0.0003* | | |
| | | | (0.0002) | | |
| Gov'r Yrs Tenure | | | | 0.001*** | |
| | | | | (0.0002) | |
| UR Vote in Regional Legis | | | | | 0.001*** |
| | | | | | (0.0002) |
| Constant | 0.068* | 0.124*** | 0.126** | 0.122*** | 0.072** |
| | (0.039) | (0.037) | (0.062) | (0.040) | (0.033) |
| Number of regions | 78 | 75 | 70 | 77 | 75 |
| Number of years | 12 | 11 | 9 | 9 | 9 |
| N | 143,254 | 135,703 | 45,440 | 139,354 | 105,654 |

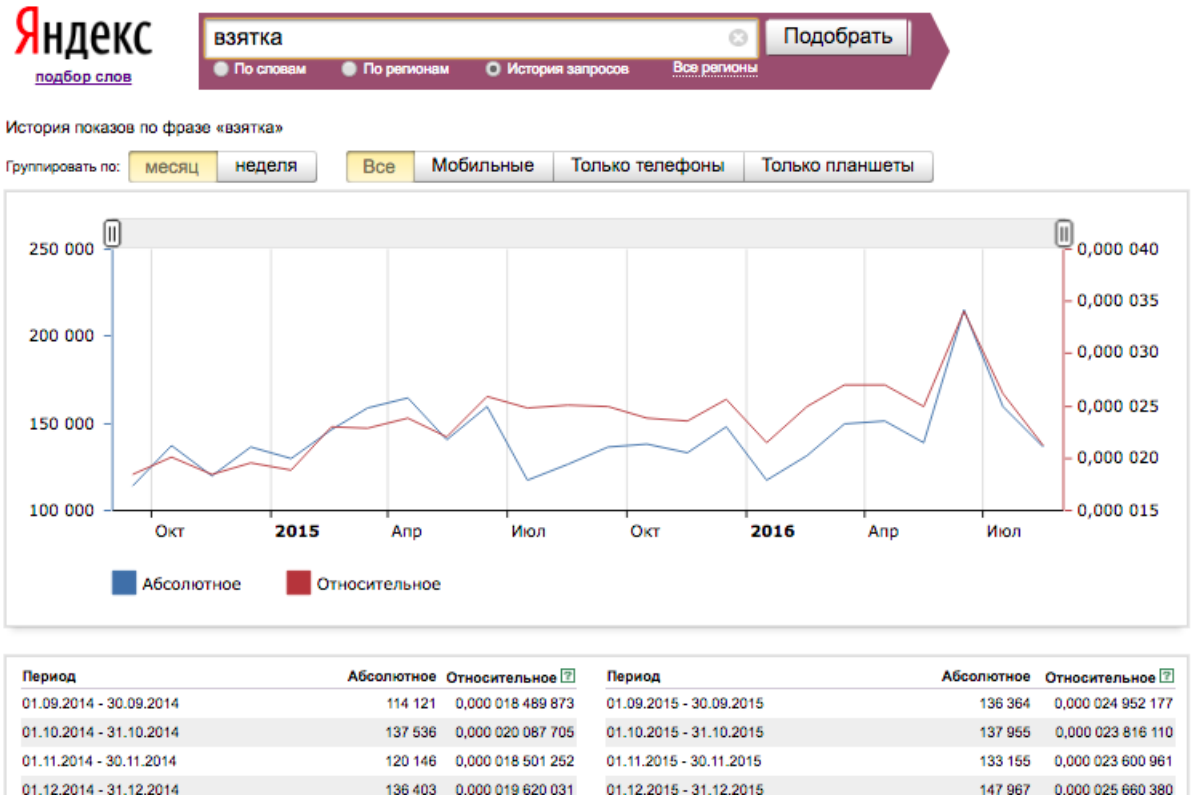
*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

regions.

### 4.4.3 Measuring Corruption Using Web Search Data

Next, I replicate my main findings using an alternative dependent variable which is observational rather than survey-based. This is an original variable that measures the frequency with which Russian internet users in each region search for relevant terms, in this case 'bribe,' using the popular Yandex search engine. Yandex, a homegrown search engine of roughly equal popularity with Google in Russia, offers a tool called Wordstat that functions nearly identically to Google Trends. Wordstat allows the user to view trends in search term popularity over time for particular regions of Russia and the world. Figure 4.4 shows the interface of this service.

**Figure 4.4:** Yandex Wordstat Interface

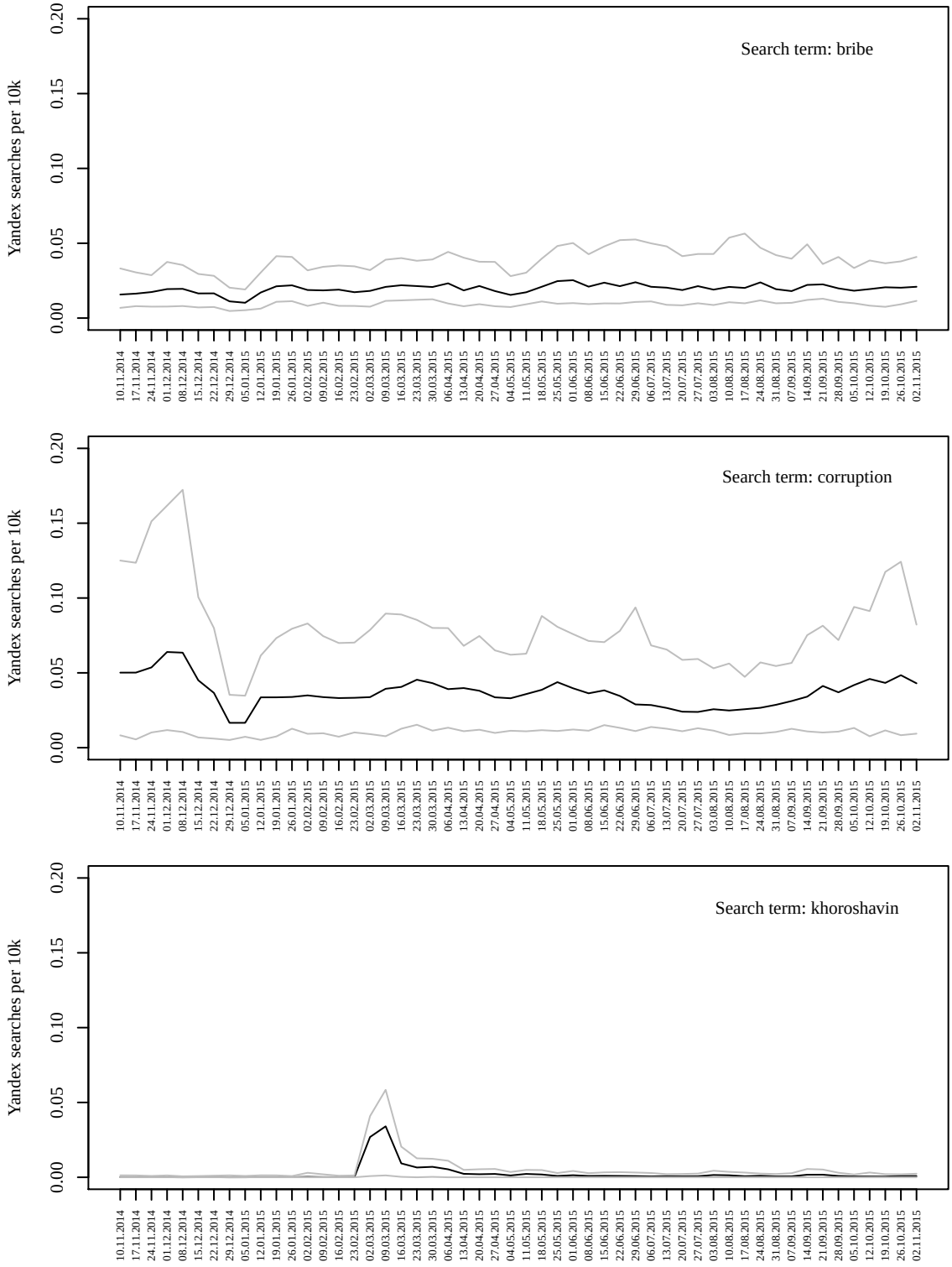



**Note:** Shown is a portion of an example page from the Yandex Wordstat interface, with search term 'bribe' entered for all of Russia. This interface can be accessed at wordstat.yandex.ru

To collect this data, I chose a set of appropriate search terms, such as "corruption," "bribe," and "how to report bribery." I then used a web-scraping tool to download the over-time content of the page for each region of Russia. Wordstat only shows the data for the last two years (if monthly averages are displayed) or one year (if weekly averages are displayed), so my ability to look back in time is quite limited. The tool shows both a total number of searches performed for each term in a region in a period of time as well as a measure of

the share of searches in that time period that the search term represents. The use of either measure produces little difference in the results. In all cases I transform the measures by relating them to Russia-wide trends—this gives a picture of comparatively how prevalent searches for that term are relative to other regions.

**Figure 4.5:** Example of Over Time Variation in Searches, Russia averages



The dependent variable here is the relative frequency (i.e. relative to overall regional search volumes) of searches for the term 'bribe' in each region, averaged over November 2014 to March 2016. The result is a region-level dataset. I then introduce my indicator for scheduled end of term and Petrov competitiveness as predictors in a linear regression. This variable shows regional-level search volumes on a week-by-week basis from approximately November 2014 to the present day. Since no earlier data is available, I am limited to testing this relationship on 2015-2016 data only.

**Table 4.8:** Alternative DV: Regional Average Yandex Searches for Bribery

| | DV: Bribery Experience | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Sched End of Term | −0.005** | −0.004** | | |
| | (0.002) | (0.002) | | |
| Petrov Competition | | | −0.002** | −0.002** |
| | | | (0.001) | (0.001) |
| Yandex: Putin Corrupt | | −13.311* | | −13.309* |
| | | (7.838) | | (7.827) |
| Yandex: Chaika Corruption | | 22.779 | | 9.086 |
| | | (29.075) | | (28.257) |
| Constant | 0.026*** | 0.031*** | 0.025*** | 0.030*** |
| | (0.001) | (0.003) | (0.001) | (0.003) |
| N | 79 | 79 | 79 | 79 |
| $R^2$ | 0.061 | 0.097 | 0.064 | 0.099 |
| Adjusted $R^2$ | 0.049 | 0.061 | 0.052 | 0.063 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

To be sure, the conclusions that can be drawn from this analysis are limited in scope. The measure captures only internet-using Russians. It is also hard to be sure exactly what it means when an individual uses a search engine to search for the term 'bribe.' However, this conclusion holds up when using alternative search terms and, as shown in Columns 2 and 4 of Table 4.8, when the grand corruption meanings of 'bribe' are controlled for

with the inclusion of search terms "Putin corrupt" and "Chaika corruption," referring to the accusations of corruption recently directed at Prosecutor General Chaika. Finally, of course, since these are region-level aggregates, we can never know anything about the individuals who are actually doing this searching. Nevertheless, the strength and significance of the results provides substantial additional evidence that political competition is closely related to bribery.

### 4.4.4 Law Enforcement Data

Another measure of corruption that has been profitably used in other studies is the number of criminal cases for corruption opened or prosecuted (Schultz, Bambang, and Zakharov 2016; Glaeser and Saks 2006; Alt and Lassen 2014). These measures are problematic for a number of reasons. First, crime statistics are often of questionable quality even in the best institutional settings, let alone in developing or non-democratic countries. Second, these measures are easily manipulated and are likely endogenous to many other features of the social and political context. Third, it is not certain that an increase in registered corruption cases, for example, represents an increase in corruption as opposed to simply an increase in enforcement. Nonetheless, this measure's prominence in the literature and its relative availability press for its inclusion in analysis of corruption levels. Table 4.9 does just that, presenting the results of non-nested multilevel models where the dependent variable is the number of criminal cases for corruption registered in each region-year per 1000 total criminal cases registered. This data was scraped from a website containing crime statistics from the Russian Prosecutor General.[14] In this case, I sum the numbers of criminal cases for taking

[14] http://www.crimestat.ru

bribes (Article 290 of the Federal Criminal Code), giving bribes (Article 291), and 'abuse of official authority' (Article 285).

**Table 4.9:** Alternative DV: Number of Corruption Criminal Cases per 1000 All Cases

| | DV: Bribery Experience | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Sched End of Term | −0.589** | −0.602*** | | |
| | (0.232) | (0.224) | | |
| Petrov Competition | | | −0.935*** | −0.293 |
| | | | (0.285) | (0.352) |
| Log GRP | | −1.043*** | | −1.143*** |
| | | (0.349) | | (0.356) |
| Pct Russian | | −3.430* | | −3.091 |
| | | (2.002) | | (1.996) |
| Log Population | | 1.085*** | | 1.083*** |
| | | (0.411) | | (0.414) |
| Republic/City/AO | | 0.399 | | 0.449 |
| | | (0.970) | | (0.969) |
| Pct Urban | | 0.113 | | 1.294 |
| | | (2.555) | | (2.563) |
| Constant | 5.099*** | 5.407 | 4.903*** | 5.385 |
| | (0.314) | (4.289) | (0.292) | (4.643) |
| N | 498 | 497 | 583 | 582 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

For all but one of the models considered in Table 4.9, greater political competition (scheduled end of term or Petrov competition) is associated with a statistically significant decrease in the number of corruption cases registered. These results should be taken as suggestive for the reasons described above, but they provide additional support for my argument that political competition diminishes bribery.

## 4.5 Conclusion

In this chapter I have rallied a wide array of data and statistical techniques to show the stark effect of political competitiveness on petty corruption in Russia. The findings presented here, showing that bribery as it is experienced every day by the public is affected in no small way by the political risks to office faced by governors, are as robust to probing examination as they are surprising. The surprise elements of the findings are what confirm the theory laid out in Chapter 2. First, rather than descend into banditry at the risk of losing one's job, actors in autocracies are constrained into *better* behavior when they know they may be punished. Even when both democratic accountability mechanisms and consolidated, hierarchical autocratic institutions are absent, still competition and the threat of punishment limit actors' rent seeking.

Second, the strong claim I have made earlier—that political competition is a potent enough force to change corrupt behavior down through many layers of regime and state structures—has been borne out by rigorous examination of the data. At first glance it may be rather surprising that even street-level bribery is affected by competitiveness shocks like ends of terms in office. But the deliberate nature with which corruption is used, the leverage that Russia's 'petite autocrat' governors have over chains of corrupt officials, and the alignment of incentives generated by political competition assure us that this finding is not in error. Officials in authoritarian regimes can be quite calculating in their management of a central dilemma: how to steal enough to enrich oneself and co-opt one's machine, while not stealing too much so as to provoke unrest and be replaced. The next chapter adds additional evidence for the veracity of this claim while exploring the findings further.

The findings in this chapter underline the importance of authoritarian institutions in affecting the incentives that regime actors face. Governors in the last year of a previously scheduled term in office are strongly and consistently incentivized to reduce corruption in their regions as a way of bolstering their reappointment chances. By employing this measure of political competitiveness—the last year in a scheduled term in office—I have been able to better causally identify the effect of competition on a day-to-day publics goods outcome under autocracy. Too rarely do we gain insight into the plausibly exogenous effects of rules and formal institutions like appointment calendars. Especially when paired with a look at outcomes as experienced by publics living under authoritarianism, the usefulness of studying such rules—features that may constrain and incentivize regime actors even without their conscious knowledge—comes to the forefront.

# 5 | Resources and Strength: Exploring Conditional Effects

> To this day it is impossible to start one's own thing [business or dealings with the state] in less than many months. You have to go to every office with a bribe—to the fire inspectors, to the health inspectors, to the gynecologist...
>
> —Vladimir Putin, address to the nation, March 6, 2009

---

In previous chapters, I have argued for and tested the proposition that increases in political competitiveness, such as those driven by the ends of terms in office, produce lower levels of corruption since governors worry about being punished by the autocrat for poor performance. A natural corollary asks: what sorts of governors will be more or less susceptible to such worries? As not all principal-agent relationships between the autocrat and his many agents are the same, the effect of competition on those relationships should depend on the characteristics of the agents.

Aside from showing that political competition has a nuanced, regime-dependent effect on corruption levels, finding support for such conditional effects also bolsters confidence that the proposed intra-regime, principal-agent dynamics do indeed underlie these results. Why is this the case? If scheduled end of term were capturing other changes occurring in these years—perhaps other changes to governors' behavior besides efforts to decrease corruption—then it would be unlikely to find evidence for the conditional effects predicted by the theory, described in Chapter 2. Only if at least two conditions are met do these alternative interpretations of scheduled end of term remain a serious threat: 1) if governors' access to resources is predicted to have the same conditional effect on corruption as the specific predictions made by my theory, and 2) if the same assumptions about *attention* and *period specificity* for end-of-term's effects on corruption hold for the alternative explanations. In other words, I have argued that there are good reasons to believe that it is *only in end-of-term years* that governors act to reduce corruption in the face of political competition. The same assumptions are much less plausible for other potential interpretations of end-of-term, and they must hold in order for those interpretations to be valid.

## 5.1 Identification

Interacting a plausibly exogenous variable with variables potentially suffering from endogeneity weakens causal identification of these parameters. In some cases, such as natural resource endowments and ethnic population makeup, these concerns are very minimal, as these regional features are highly unlikely to have been substantially shaped by corruption levels or other confounders. For other variables where endogeneity may be a greater concern, like size of government or turnover in government, I take the results as suggestive and

supportive of my overall conclusions.

While the conditional unconfoundedness of variables like a governor's year of tenure in office is fundamentally impossible to prove, several factors make it very plausible. First, it is difficult to draw a clear line from *petty corruption* to a governor being fired *in a non-end-of-term year*. In other words, while a governor may be fired for grand corruption and abuse of office[1] if those become too egregious, the 'reverse causality' case of high petty corruption levels directly causing a governor's tenure in office to end is much harder to make. Certainly other related factors may come into play, such as if petty corruption prompts a governor's support among crucial stakeholder to falter, so I make no strong claims of exogeneity. But it seems more likely that a governor who has been in office for many years and has been able to build the political resources necessary to remain in place will feel secure enough to engage in high quantities of petty corruption to reward his political machine than that this corruption directly influences his ability to stay in office.

## 5.2 Theoretical Expectations

In the preceding chapter, I provided evidence that Russian governors are sensitive to the signaling nature of corruption. When they see political competition rise, such as when their term in office is coming to a close, they decrease corruption so as to avoid falling foul of the autocrat. In Chapter 5 I explain why, in fact, this dynamic is likely to be more complex

[1]Several examples of this from recent history include Nikita Belykh, former governor of Kaluga, and Aleksandr Khoroshavin, former governor of Sakhalin. While the Belykh case especially is tainted by political machinations that call the veracity of the corruption charges into question, nevertheless there are an increasing number of such steep falls from power for Russian governors in a regime increasingly concerned with appearing clean.

than the one-size-fits-all relationship demonstrated in Chapter 4. If a governor feels that he is already in a very secure position vis-a-vis the autocrat, he will be far less concerned about sudden rises in political competition derailing his time in office.

While unfortunately it is impossible to fully measure an autocrat's opinion of all of his key agents, we can employ proxies that capture the political resources, strength, and performance of governors. The more resources and strength a governor possesses, the harder it should be for the autocrat to fire him when the end of his term arrives. Similarly, the better performing a governor is in areas besides corruption, the more likely it is that the autocrat will overlook limited indiscretions in that area and leave him in office.[2]

In this chapter, I focus on the three rough categories of governor characteristics—resources, strength, and performance—that should apply more generally in any setting where my theory applies. Certainly, though, other features could matter—features which I do not or cannot contend with here. For example, a close personal relationship between a governor and the autocrat could sway the autocrat's decision making. Leverage on the part of the governor could make his removal difficult in ways that would be hard for an outside observer to reliably measure. Since such aspects of the principal-agent relationship are essentially impossible to capture cleanly in an empirical analysis, I set these aside.

As long as a governor does not become a threat to the autocrat,[3] an autocrat will

[2]This underlines that corruption is but one signal of performance of an agent, though I argue that it is a crucial one for several reasons outlined in Chapter 2. As long as a governor's corruption is not so bad that it cannot be overlooked or that the threat of public dissatisfaction approaches the boiling point, a high-performing governor can freely allow some bribery.

[3]In the case of Russia, this is rather hard to conceive of under the current regime, though some would likely point to Chechen President Ramzan Kadyrov as a potential threat to Vladimir Putin's stable rule.

view a stronger or more resource-rich governor favorably (Buckley and Reuter 2015). Indeed, the autocrat is incentivized to co-opt those resources and maximally secure his rule in the governor's region. So a rational autocrat incorporates positive signals of performance and resources, discounts (within reason) signals of high corruption, and is likely to leave the governor in office for another term. For his part, the governor has a sense, with some uncertainty, of how well he is performing and how secure he is, and does not feel the need to drastically reduce corruption during competitive times.

## 5.3 Regression Analysis

In this chapter, I continue with the general empirical approach employed in Chapter 4. Multilevel models that take individual-level survey responses at the 'first' level and region-year covariates at the 'second' (group) level are used, with testing of the proposed conditional effects conducted by interacting measures of governor resources with the Scheduled End of Term covariate. As I am interested in the effect of governor resources on the (previously demonstrated) negative relationship between final year of a term in office and experienced petty corruption, the sign and statistical significance of the coefficient on the interaction term serves as an indicator of that effect. For example, when a measure indicates greater governor resources, a positive interaction term shows that greater resources *lessens (weakens)* the effect of political competitiveness on corruption levels. This would provide confirmatory evidence of my theoretical expectations.

I operationalize governor resources as a set of proxy measures indicating when a Russian governor is likely to feel more secure, more powerful in his or her regional political milieu. Since I think of resources in a broad way—purely political, bureaucratic, economic,

social—any of a set of such measures can partially capture the strength of a governor. Most clear, perhaps, is the variable that assesses the proportion of regional economies that is based in natural resource production. Governors of regions with greater natural resource endowments have leverage with their local political machines and elites, with Moscow in budget and other negotiations (even if natural resource revenue is predominantly transferred quickly to the center, as it often but not always is), and with the public in their region.[4] I hypothesize that governors with these resources at hand can exploit them—especially when competition is high—to ensure the public's contentment and the autocrat's reappointment assent in the face of high corruption levels. Even if resources are used as a substitute for corruption rents, that effect would be quite constant over time and should not be associated with times of high competition such as final years of terms in office.

In Table 5.1, I explore this finding further, showing conditional effects of *Scheduled End of Term*. In Column 1, I show the effect of *Scheduled End of Term* when interacted with another exogenous variable, *Nat Resources*. This variable measures the proportion of a region's economic output produced by natural resources. Under my theory, such windfall income should serve as a cushion for embattled autocrats—a substitute for corruption income—and thus lessen the effect of *Scheduled End of Term*. Indeed, a region with no natural resource production shows a substantially larger effect of political competition than that found in Table 4.2: -0.007. The positive and statistically significant coefficient on the interaction term between *Nat Resources* and *Scheduled End of Term* shows that the effect of *Scheduled End of Term* sharply shrinks, the more natural resources a region has.

[4]So, we can see Tatarstan employing natural resource wealth (along with a strong sense of non-Russian ethnic identity and solidarity) to bolster public opinion by building infrastructure.

Column 2 shows the mediating effect of another factor decreasing the salience of political competition for an autocrat: ethnic identity. Here, I interact the covariate measuring the percentage of the regional population that is ethnically Russian with *Scheduled End of Term*. Since so-called titular republics in Russia are generally headed by members of the majority (non-Russian) ethnic group, such leaders should find it easier to maintain control and dominance of a state the greater the weight that their coethnics have in the population. In heavily Russian regions, society is quite homogenous and so political competition can arise as a significant threat from any direction. The coefficient on the interaction term is negative and statistically significant, showing that heavily Russian regions show a much stronger effect of increased political competition than do ethnically diverse regions.

In Table 5.1, I show how a number of characteristics of a governor's political machine and the bureaucratic state it governs shape the effects of competition on corruption levels. This points to the important role of a politicized elite bureaucracy in actively collecting and distributing bribes. These bribes function as a sort of glue, a means of control, over the state apparatus. By showing that features of that apparatus and the amount of need for the 'glue' temper the sensitivity of the regime to political competition, one can see the role that corruption plays in authoritarian institutions beyond merely being manipulated to keep the public just happy enough not to revolt.

How does the size of the elite bureaucracy—composed of the viziers and vice governors who populate the upper reaches of a Russian regional autocrat's regime—affect political competition depresses corruption? To capture this, in Column 3 of Table 5.1 I include and interact with *Scheduled End of Term* a variable, *Gov't Size*. This variable is an original

**Table 5.1:** Corruption, Competition, and the State

| | DV: Bribery Experience | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Sched End of Term | −0.007** | 0.067*** | −0.038*** | −0.003 | 0.002 |
| | (0.003) | (0.016) | (0.008) | (0.004) | (0.003) |
| Nat Resources | −0.002*** | | | | |
| | (0.0004) | | | | |
| Resources X End of Term | 0.0004 | | | | |
| | (0.0003) | | | | |
| Pct Russian X End of Term | | −0.085*** | | | |
| | | (0.019) | | | |
| Gov't size | | | −0.0002* | | |
| | | | (0.0001) | | |
| Gov't Size X End of Term | | | 0.001*** | | |
| | | | (0.0002) | | |
| Official Turnover | | | | −0.006* | |
| | | | | (0.004) | |
| Offc Turnover X End of Term | | | | 0.002 | |
| | | | | (0.005) | |
| Machine Organization | | | | | −0.009*** |
| | | | | | (0.002) |
| Machine Org X End of Term | | | | | 0.003* |
| | | | | | (0.002) |
| Log GRP | 0.014 | −0.008 | −0.017* | −0.014 | −0.019* |
| | (0.011) | (0.009) | (0.009) | (0.009) | (0.010) |
| Pct Russian | −0.084* | −0.047 | −0.123** | −0.115** | −0.066 |
| | (0.047) | (0.050) | (0.049) | (0.049) | (0.053) |
| Log Population | −0.006 | 0.019 | 0.019 | 0.015 | 0.031** |
| | (0.014) | (0.012) | (0.012) | (0.012) | (0.013) |
| Republic/City/AO | −0.023 | −0.021 | −0.062*** | −0.062*** | −0.009 |
| | (0.021) | (0.022) | (0.024) | (0.024) | (0.024) |
| Pct Urban | −0.089* | −0.095* | −0.124** | −0.139** | −0.064 |
| | (0.054) | (0.057) | (0.057) | (0.058) | (0.059) |
| Constant | 0.188 | 0.059 | 0.257* | 0.283** | 0.007 |
| | (0.123) | (0.125) | (0.135) | (0.138) | (0.135) |
| Number of regions | 77 | 77 | 75 | 75 | 76 |
| Number of years | 12 | 12 | 9 | 8 | 12 |
| N | 142,558 | 142,558 | 131,853 | 130,516 | 136,345 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

measure generated from a large new database of Russian elite actors (see Reuter and Buckley 2016). It simply captures the number of department-level or higher officials in each Russian regional government in each year. This includes mostly high-ranking officials like so-called vice governors, but also lower-ranked heads of agencies and departments. The larger this regime machinery and professional staff, the more of a bulwark the petite autocrat should have against the vagaries of political competition. This is exactly what we observe, with

larger elite bureaucracies decreasing the magnitude of political competition's effect. It should be noted that this bureaucracy is defined differently from the typical measure of all state employees, encompassing here only individuals quite highly placed in the regime. The effect observed here holds for either the highest ranked officials only (e.g., vice governors) or for mid-level officials only.

Column 4 of Table 5.1 shows how a disruption to bureaucratic structures—turnover of high-placed officials in the regime—affects even low-level corruption that is experienced far from the halls of power. Even in non-competitive times (i.e., when there is no scheduled end of term in office), greater turnover among officials is associated with sharply less bribery. It is true that we cannot be completely certain that this turnover is not being caused endogenously by corruption scandals or public dissatisfaction with levels of corruption. However, accountability and free press mechanisms are so weak in Russian regions that it is vanishingly rare that an official would be punished for street-level bribery. This lends credence to the interpretation of the coefficient on the interaction term of *Official Turnover* and *Scheduled End of Term* as capturing turnover among officials for non-corruption reasons, and thus measuring the size of the effect of disruption in regime hierarchies on corruption levels.

Finally, Column 5 incorporates a measure of the level of organization of the regime's political regime. There is substantial variation from region to region and, indeed, from electoral precinct to electoral precinct, in the vote share that the ruling party, United Russia, garners. What is more, there is great variation in the dominance that regional autocrats show in generating pro-regime votes within their fiefdoms. Russia's electoral system is divided into (in increasing size and aggregation): precincts, districts, and then regions. The variable *Machine Organization* captures the extent to which authoritarian political machines

are well-organized and capable. I generate the *Machine Organization* measure by calculating the standard deviations of both turnout and United Russia vote share at the precinct level (weighted by precinct population). I then sum the turnout and vote share standard deviations to produce one value that captures the homogeneity of pro-regime votes within each region across that region's precincts.

Here too I find a strong, positive conditional relationship between political machine strength and end of term, with an estimated coefficient on the interaction term of 0.003. This indicates that for every standard deviation increase in the strength of machine organization, end of term has a weaker reducing effect on corruption by nearly 100%. This supports my theory—where governors have little in the way of machine resources to rely on, they are particularly threatened by end of term political competition and so reduce corruption drastically. When they can draw on a capable machine, they have no need to decrease corruption in end of term years and may in fact increase it.

In Table 5.2, I present another set of proxy measures for governor strength and resources—the alternative measures of political competition employed previously in Table 5.1. Functioning as ways of capturing political competitiveness, they can also be thought about working in the other direction and assessing the resistance of a governor to political competitiveness. In Columns 1-5, I interact press freedom, United Russia's share of the vote in region from the last national election, the governor's margin of victory (if applicable) in his last electoral contest for office, the years of tenure the governor has accumulated in office, and United Russia's share of the vote in the last elections for the regional legislature, respectively. In the Russian context, greater press freedom may indicate a weaker grip on regional politics and so constitutes a sign of governor weakness, all other things being equal. The

remaining four measures are all increasing in governor strength and resource endowment. Positive interaction term coefficients for these four variables indicate that the negative effect of an end of term is decreasing, i.e. weakening. This would indicate that governors with these characteristics feel less susceptible to political competition due to their political strength.

**Table 5.2:** Alternative Measures of Competition

| | DV: Bribery Experience | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Scheduled End of Term | 0.037*** | 0.006** | 0.001 | −0.002 | −0.061*** |
| | (0.009) | (0.003) | (0.010) | (0.005) | (0.011) |
| Press Freedom | 0.018*** | | | | |
| | (0.004) | | | | |
| Press Freedom X Sched End Term | −0.013*** | | | | |
| | (0.003) | | | | |
| UR Vote in National Elects | | −0.009*** | | | |
| | | (0.003) | | | |
| UR Vote Nat'l X Sched End Term | | 0.019*** | | | |
| | | (0.003) | | | |
| Gov Mar Victory | | | 0.0001 | | |
| | | | (0.0002) | | |
| Gov Mar Victory X Sched End Term | | | 0.001*** | | |
| | | | (0.0002) | | |
| Gov Yrs Tenure | | | | 0.001*** | |
| | | | | (0.0003) | |
| Gov Yrs Tenure X Sched End Term | | | | −0.0003 | |
| | | | | (0.001) | |
| UR Vote in Regional Legis | | | | | 0.0001 |
| | | | | | (0.0002) |
| UR Vote Regional X Sched End Term | | | | | 0.001*** |
| | | | | | (0.0002) |
| Constant | | | | | |
| Number of regions | 78 | 75 | 70 | 77 | 75 |
| Number of years | 12 | 11 | 9 | 9 | 9 |
| N | 143,254 | 135,703 | 45,440 | 139,354 | 105,654 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

I find strong support for the proposition that strong governors do not feel susceptible to political competition shocks for governor tenure, Column 4. This is a strong and statistically significant coefficient, indicating that the more years a governor has been in office, the less he decreases (or, in fact, the more he may increase) corruption when an end of term year arrives. Columns 1 and 2 do not support my theory, showing a positive and negative

coefficient, respectively, which is the opposite of what I expected. The remaining columns are not significant and show very small estimated effects.

## 5.4 Robustness

In Table 5.3, I reproduce Table 5.1, but using my main alternative measure of political competitiveness besides the end of term indicator—the Petrov-Titkov democracy score. As discussed in previous chapters, this measure does not offer the same advantages in exogeneity that the scheduled end of term in office measure does, but it does have several aspects that make it well worth considering as a robustness check. It is a continuous measure of political competition rather than a dichotomous one, it holistically captures 'background' levels of political competition aside from brief temporal shocks, and has been used extensively in existing research to show when politics have grown competitive in Russian regions.

Examining the findings in Table 5.3, the results here are mixed. In several models the results do not line up with theoretical expectations or the results in Table 5.1, with a number of coefficients having the opposite sign from what was expected. For example, greater natural resource availability has a negative conditional effect on corruption, indicating that natural resources prompt governors in competitive regions to reduce corruption even more than those in regions without natural resources. This runs counter to previous findings. Two possible explanations for these results stand out. First, collinearity between the Petrov measure of political competition and factors like natural resources may be biasing the estimated coefficients. Second, the extremely slow-moving nature of all of the variables being measured here may be making it difficult to accurately assess effects in single region-years, as these

**Table 5.3:** Corruption, Competition, and the State: Additional Measures

| | DV: Bribery Experience | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Petrov Competition | −0.013*** | −0.061*** | −0.010** | −0.014*** | −0.014*** |
| | (0.004) | (0.015) | (0.004) | (0.004) | (0.004) |
| Nat Resources | −0.002*** | | | | |
| | (0.0004) | | | | |
| Nat Resources X Petrov Competition | −0.001** | | | | |
| | (0.0003) | | | | |
| Pct Russian | −0.097** | −0.031 | −0.126** | −0.115** | −0.062 |
| | (0.047) | (0.051) | (0.050) | (0.050) | (0.052) |
| Pct Russian X End of Term | | 0.056*** | | | |
| | | (0.018) | | | |
| Gov't size | | | 0.0001 | | |
| | | | (0.0001) | | |
| Gov't Size X Petrov Competition | | | −0.0002* | | |
| | | | (0.0001) | | |
| Official Turnover | | | | −0.004 | |
| | | | | (0.003) | |
| Offc Turnover X Petrov Competition | | | | −0.002 | |
| | | | | (0.004) | |
| Machine Organization | | | | | −0.006*** |
| | | | | | (0.002) |
| Machine Org X Petrov Competition | | | | | −0.004* |
| | | | | | (0.002) |
| Log GRP | 0.027** | 0.0005 | −0.005 | −0.007 | −0.015 |
| | (0.011) | (0.009) | (0.009) | (0.009) | (0.010) |
| Log Population | −0.017 | 0.016 | 0.013 | 0.013 | 0.032** |
| | (0.014) | (0.012) | (0.012) | (0.012) | (0.013) |
| Republic/City/AO | −0.035* | −0.026 | −0.072*** | −0.068*** | −0.018 |
| | (0.021) | (0.022) | (0.024) | (0.025) | (0.024) |
| Pct Urban | −0.072 | −0.107* | −0.112* | −0.114* | −0.042 |
| | (0.054) | (0.058) | (0.059) | (0.059) | (0.059) |
| Number of regions | 77 | 77 | 75 | 75 | 76 |
| Number of years | 12 | 12 | 9 | 8 | 12 |
| N | 142,558 | 142,558 | 131,853 | 130,516 | 136,345 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.
Individual-level predictors male, age, education, urban, income not shown.

models are attempting to do. Therefore, I take these results suggestively, while noting that they modestly reduce confidence in the main findings of this chapter.

## 5.5 Summary and Discussion

In this chapter, I have shown how the political strength of a governor conditions the effect of political competition on the amount of corruption that the governor permits in his region. Where governors have independent resources or sources of stability, political competition

matters less to them. They are thus less compelled to decrease corruption in order to please the autocrat. In other words, not only are governors particularly worried about being punished by a discontent public and disappointed autocrat during times of high political competition, as I showed in Chapter 4, but not all governors are equally worried. Some governors have additional resources to draw on that make them feel more secure in office than governors without these resources. Being more secure, they are less strongly incentivized to reduce corruption in these end of term times.

This chapter highlights the importance of context in drawing out the effects of incentives on regime actors. While the theory I am testing shows a relatively simple relationship in how competition incentivizes behavior within authoritarian principal-agent relationships, the present chapter notes the complexity of those underlying relationships and of this causal effect. The autocrat in the case of Russia is essentially a fixed, unvarying factor in the governor-autocrat dynamic, but the contexts within which the governors are making their decisions about their job security and about levels of corruption are not static. I show some examples of how those decisions can be thought of more diversely.

The findings in this chapter also contribute to literatures that describe how features like natural resources or political machines can be used by authoritarian leaders to strengthen their holds on power. I show one path through which these features can work—corruption and fear of political competition. This also suggests a potentially fruitful path forward for research in many areas. Scholars should consider theoretically-motivated *conditional, interactive* ways that resources, public goods, clientelism, state capacity, and other factors work together to shape how autocrats govern and how they maintain durable regimes.

Finally, perhaps most importantly for the present study, this chapter has attempted to

provide confirmatory evidence for the theory presented in Chapter 2 and tested in Chapter 4. While I am unable to fully 'connect the dots' between governor decision making, corruption as a public good, and political competitiveness, since that would require data that is, if not impossible to conclusively collect, at least beyond the scope of this dissertation, I do test straightforward observable implications of those mechanisms. Given that the mechanisms implied by my theory involve a rather deep dive into the decision making processes inside governors' heads, this chapter provides a look at other features of that decision making arena that should shape how governors act. Indeed, I find that contextual factors that capture governors' security in office strikingly condition how much those governors react to political competition.

# 6 | Autocrats, Governors, and the Risk of Public Unrest

> What, shall one of us, That struck for the foremost man of all this world But for supporting robbers—shall we now Contaminate our fingers with base bribes, And sell the mighty space of our large honors For so much trash as may be grasped thus?
>
> —Shakespeare, *Julius Caesar*

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A key assumption of the theory developed and tested in preceding chapters is that the public experiences corruption directly and reacts negatively to those experiences. It is this reaction that autocrats and governors seek to 'manage,' especially in times of high political competition, by keeping corruption rare enough that the public is acquiescent. In this chapter I test these empirical implications: does the public's trust in the government, voting behavior, or inclination to protest depend on experiences with corruption? How are these reactions shaped by institutions and context, including political competitiveness? By showing that the Russian public is deeply, negatively affected by petty corruption experiences, I lend additional

support to the findings presented in previous chapters as well as their interpretation. This chapter also highlights the importance of the threat of public protest in autocracies and of understanding the attitudes of publics living under authoritarianism.[1]

This chapter seeks to build on and test the observation that autocrats and governors are not unfounded in their fear of the public protesting or being dissatisfied about corruption levels. As we have learned from work such as that of Magaloni (2006), such regimes can be quite sophisticated in measuring and reacting to public opinion. While the ultimate fear is of mass street protest possibly leading to revolution, such as that seen in many of the so-called colored revolutions of the mid-2000s in Georgia and Ukraine, this can be thought of as a result that is strongly off the equilibrium path for all actors: the autocrat, his agents, and the public. For this reason, the use of detailed individual-level data can be very useful in building a picture, however imperfect, of attitudes and beliefs *on* the equilibrium path. In other words, are autocratic publics sensitive to public goods like corruption? Do they react to negative experiences with corruption in a predictable way that could, if pushed further, prompt dangerous anti-regime action? In this chapter I rally extensive new data sources to answer these questions in the affirmative, joining existing research in showing that autocrats are right to seek to tailor phenomena like corruption to avoid discontent.

Why bother keeping a population living under authoritarianism happy? Short of the efficiency losses entailed in wholesale theft of most of an economy, even autocrats face real risks from a dissatisfied public. Indeed, this risk looms large for all but the most secure,

[1]This chapter incorporates several parts of an unpublished manuscript "Of Bribes and Badges in Russia: Does Paying a Bribe Undermine Trust in Government?" (Buckley and Frye 2013), presented at the Annual Meeting of the Midwest Political Science Association in April, 2013. The data and analyses presented here, however, are original to the present work.

coercive autocratic leaders. Public discontent in its various forms—protest, unrest, rebellion, or even revolution—figure prominently in many theories of autocratic longevity. The models presented by Acemoglu and Robinson (2006) and Boix (2003) describe publics whose threats of revolution are so substantial that elites would prefer to democratize than take the risk of being deposed.

Closer in spirit to the present study is a growing literature on why and when autocrats provide public goods in an effort to assuage popular pressures. Autocrats are well aware that they cannot simply steal all economic production for themselves (Olson 1993). One risk is preference falsification until a rift appears and the public rises up to fight the regime (Kuran 1991, 1997). But before that point is reached, public goods should be provided only in so far as they are a 'cost-effective' way of keeping the population happy. Despite the prominence of petty corruption as a public 'bad,' relatively little research examines the public's responses and reactions to experiencing corruption (see, though, Tucker and Klasnja (2013, 2016) and Reisinger, Zaloznaya, and Claypool (2016)). In this chapter, while testing key assumptions and implications of my theory, I build upon the insights in existing research. By bringing new data on *experienced* corruption to bear and focusing on one *authoritarian* context, I show that Russian governors' fears of being fired for allowing public discontent to rise too far—fears which are only heightened in times of high political competitiveness—are well-founded. Even in highly corrupt, non-democratic regimes, publics are exceedingly reactive to experiences with petty corruption.

Despite the widespread condemnation of corruption, some scholars have argued that corruption need not undermine trust in public institutions. This revisionist view of corruption suggests that bribepaying can become so engrained in a culture that citizens attach

little normative content to the practice. Borrowing from this strain of thought, Miller et al. (1998: 15) develop "two ideal types of low-level corruption." The first of which is a "culture of corruption model"—a culture of mutual favors in which citizens are happy to give bribes and officials are happy to accept them. Both sides justify the practice, perhaps morally justify it, and neither feels that they are acting under duress."

Indeed, some scholars working in the modernization tradition view corruption as performing critical functions in a weak political environment. Huntington's oft cited quote (1968: 69) "the only thing worse than a society with a rigid over centralized dishonest bureaucracy is one with a rigid over centralized honest bureaucracy" represents one of the clearest depictions of this view. But he is not alone. Becquart-Leclerc (1989: 192) argues: "Corruption functions like grease in the gears: it has an important redistributive effect, it is a functional substitute for direct participation in power, it constitutes the cement between elites and parties, and it affects the effectiveness with which power is exercised." Similarly, Leys observes that "the greater the corruption, the greater the harmony between corruptor and corruptee" (1965). If anything, this last would lead one to expect that bribepaying should be associated with a positive view of government.

The relatively benign view that culture can dampen the normative impact of bribery on public attitudes is hardly unknown in the postcommunist region. As Lovell (2002:34) notes: "Institutions take their meaning from the political culture in which they operate. And the 'political culture' (to take the broadest meaning of this term) of postcommunism is still in the shadow of communism. The legacy of communism includes a preference for the bureaucratic-administrative way of doing things; it condones corrupt behavior (accepting it as sometimes even functionally necessary)." Similarly, Bowser (2002: 85) observes that

"while the actions of the elites are perceived as being inevitably corrupt, the everyday corrupt acts that citizens perpetrate (e.g., paying state medical staff for treatment) are not."

The view that corruption can become a social norm and create a culture of corruption finds echo in some game theoretic treatments of corruption (Bardan 1997). The act of engaging in corruption may generate norms of noncompliance that spread throughout society thereby minimizing the negative connotations associated with bribery (Mishra 2006). Indeed, if most people pay bribes, then honest citizens are disadvantaged, and are likely to be more frustrated with the government that will be bribepayers. If this benign view of corruption were true, then at a minimum, we would expect bribepayers to be no less likely to trust the government than non-bribepayers, and if anything, may express greater trust in government given the trust needed to engage in bribery.

On the other hand, many observers argue that the payment of bribes is likely to be associated with less trust in government as bribepayers resent having to pay state officials for services that should be provided by law (Eigen 1997; UNDP 1997: vii). In addition, many argue that corruption undermines trust in government by highlighting the lack of equality before the state and revealing the underlying distribution of power in society (Noonan 1987; Uslaner 2008). This orthodox view of corruption has become an article of faith in the international economic development community.

The theory described in Chapter 2 stipulates that a self-interested governor is concerned with keeping the public in his region just satisfied enough with his leadership to not protest or press for his removal. There are several testable implications of this proposition, each of which I test in this chapter.

1. Individuals react negatively to experiences with petty corruption, rather than being re-

signed to corruption, indifferent, or positively disposed to it

2. Governors who are popular or see little protest are less responsive to political competition shocks in reducing corruption

3. Governors will use contextual clues to focus reductions of corruption on groups that are more likely to protest in response to corruption experiences

The combination of individual-level data on attitudes and experiences with macro-level data on governor popularity allows me to answer these questions in a way that avoids some of the ecological fallacy concerns and observation of off-the-equlibrium-path behavior that might come with the use of aggregate data or observational data about public protest events.

## 6.1 Empirical Approach

Surveys that ask directly about personal experience with corruption have the advantage of clarity in that the respondent can rely on personal experience to answer the questions. For example, Seligson (2002: 2005) develops a "corruption victimization index" which relies on direct questions of respondents that ask, among other things, whether they have paid a bribe to a police officer. He finds that experiences with corruption are negatively correlated with perceptions of government legitimacy in four Latin American countries. Miller (2005) takes a slightly different approach by asking respondents not whether they paid a bribe, but whether an official has "ever asked you or your family directly for money, or a present, or not asked directly but seemed to expect something?" This approach presents the initial offer as coming from the state official and thereby may make respondents more willing to answer.

Direct questions about experiences with corruption have the great advantage of clarity because we rely on individuals recounting their own behavior, but also raise concerns about the reliability of responses. Direct questions likely underreport bribery, as respondents may be reluctant to admit to engaging an illegal activity and thereby implicate themselves or others. Miller at al. (1998:78) note that direct questions "involve confessions as much as allegations." Direct questions about experiences with corruption may be more helpful in democratic settings where discussions of engaging in corruption may be less plagued by response bias. In autocratic settings the bias in responses raise the possibility of a spurious relationship between bribery and distrust because more outspoken respondents may be both more likely to admit engaging in corrupt behavior and be more willing to express distrust in the government.

Other studies rely on perceptions of corruption. To explore the impact of corruption on evaluations of government, Anderson and Tverdova (2003) use national-level data on corruption from the Corruptions Perceptions Index from Transparency International and individual level data on evaluations of government from the International Social Survey Program (ISSP). They find not only a direct effect of corruption on trust in civil servants in 16 countries, they also find that respondents in more corrupt countries who support the political opposition express even less trust in civil servants. In a similar vein, Mishler and Rose (2001) use data from 10 countries in Eastern Europe and report that perceived corruption is associated with less trust in political institutions. Using the East Asian Barometer, Chang and Chu (2007) measure corruption by asking respondents: "How widespread do you think corruption and bribetaking are in your national [capital city] government?" Responses are placed on four point scale where 1 equals "hardly anyone is involved" to 4 equals "almost

everyone is involved." It is important to understand perceptions of corruptions in their own right, but perceived corruption may correspond only roughly with objective levels of corruption (Olken 2007; Treisman 2007; Krastev 2009).

Another approach is to use indirect survey questions that ask not directly about the respondents' behavior, but about "respondents like them." This technique is commonly used to measure corruption in firm surveys (Frye and Shleifer 1996; Svensson 2003). These indirect questions may be less threatening for respondents to answer, but likely introduce greater noise as respondents may have little idea about how other "people like them" have experienced corruption.

### 6.1.1 Data and Research Design

Most of the surveys incorporated into the data set I employed in Chapters 3 and 4 have little to data to offer about corruption besides the experiential question I use. Similarly, consistent data about trust and other political features is rarely found. In order to learn about how corruption experiences affect individuals' attitudes and behavior, it is useful to have broader evidence about these corruption experiences. In addition to the full complement of data from my 16-survey data set, in this chapter I also focus on responses to a 2016 survey conducted by the Levada Center at the behest of the author and colleagues. This allows a closer look at how and when the public reacts to bribery.

These questions were included in one wave of a recurring, nationally-representative survey of 1,600 Russians conducted by the Levada center. The questions asked if respondents had experienced a government official requesting or extorting a bribe from them in the last

**Table 6.1:** Detail on Questions in 2016 Survey (Levada Center 'Courier')

| Question | Proportions | Available Answers |
|---|---|---|
| 3a | 18.7%<br>81.2% | 1) I was surprised<br>2) This was not unexpected for me |
| 3b | 58.3%<br>12.1%<br>29.6% | 1) I felt irritation, got angry<br>2) I felt ease, relief<br>3) I was indifferent |
| 3c | 58.0%<br>42.0% | 1) It was materially difficult<br>2) It was not so materially difficult |
| 3d | 70.7%<br>29.3% | 1) I felt that it was amoral<br>2) I felt that it was basically normal |

five years, and, if so, whether they felt each of the reactions listed. Each question also included a third possible response: there was no case of experiencing bribery in the last five years. Overall, 79% of respondents chose this last response, indicated that they had not had a bribery experience of this sort in the last five years. This accords well with evidence from other sources about the prevalence of bribery in Russia. All proportions reported in the Tables 6.1-6.8 are proportions of those 21% of respondents who indicated that they had experienced bribery.

### 6.1.2 Causal Identification

In the first part of this chapter, I use survey responses about willingness to protest, regime satisfaction, and trust in the government as dependent variables, with the variable used as the dependent variable in Chapters 4 and 5 (having experienced a bribe request from an official) serving as my predictor of interest. To be sure, having experienced a bribe request is far from randomly assigned, making unconditional independence of the predictor unlikely. Independence conditional on observable individual characteristics is more likely, but the

possibility of endogeneity remains and cannot be solved using the data at hand. What are the potential sources of endogeneity and how serious of concerns are they for causal inference in these regressions? I list and discuss several here.

1. Participating in or contemplating public protest may put one in situations that increase the probability of experiencing bribery (reverse causation)

2. Individuals with general anti-regime attitudes may be more willing to report bribery experiences *and* to report being willing to engage in protest actions (omitted variable bias, confounding)

3. Reporting that one is inclined to participate in protest may be a 'cheap talk' signal of general dissatisfaction rather than an indicator of true willingness to go out on the streets (construct validity)

Eliminating or even seriously mitigating these concerns remains the work of future, experiment-based research. For present purposes, I simply endeavor to include as many key potential confounders in my regression analyses as possible and to remain tentative in interpreting the results of those regressions. The inclusion of potential confounders such as general attitude towards the regime lessens the second and third concerns with endogeneity, if the results withstand their inclusion. I also note that the first endogeneity concern seems rather implausible in the Russian context. As noted in previous chapters, the petty bribery under study here is a serious material burden for many Russians. Furthermore, there is no evidence to support or other reason to believe that protesters themselves are situationally subject to bribery in ways that non-protesters are not.

## 6.2 Effects of Corruption on Individual Attitudes

In this section I focus simply on individuals' reactions to corruption experiences. I take a number of attitudinal measures and measures capturing potential behavior as self-reported by respondents as dependent variables, looking for negative correlations of corruption experiences on attitudes like trust in the governments and positive correlations with willingness to protest.

Why is it important to test empirically what seems to be a straightforward or even obvious association? Is there any reason to think that the public would *not* react in such ways to corruption? This is an important endeavor for several reasons. First, such an association is in fact often assumed but rarely tested with direct, individual-level measures in modern authoritarian regimes. While evidence coming from survey responses about topics like protest should be interpreted with care, such efforts can help us open the black box of how authoritarian publics related to the regimes they live in and how they react to regime misbehavior. Second, it should not simply be assumed that individuals in authoritarian regimes will be particularly reactive to petty corruption experiences. Perhaps they are more sensitive to media reports of grand corruption, perhaps they are jaded from years of dealing with mundane bribery, or perhaps they view corruption as a positive, efficiency-enhancing time saver. Distinguishing between these alternative possibilities is important. Finally, these attitudes and reactions to corruption form a crucial underpinning of the theory outlined in Chapter 2. In order for governors and the autocrat to need to be responsive to the public in shaping corruption levels, they must be able (consciously or unconsciously) be aware of the potential for corruption to drive citizen discontent with the regime.

### 6.2.1 Reactions to Corruption Experiences

Before moving to assess correlations between having personally experienced corruption and attitudinal measures, an important 'baseline' for capturing how individuals living in Russia's authoritarian regime can be set by asking them directly about those experiences and their reactions. Here I do just that by providing simple descriptive analysis of how survey respondents say that they felt about their encounters with bribery. I analyze a number of original questions that were included on an early-2016 survey conducted by the Levada Center.

Do Russians in 2016 feel that, when they are compelled to give a bribe to a government official, the magnitude of the bribe constitutes a material burden? In other words, is petty bribery a painful cost to individuals, or is it a mere annoyance? Table 6.2 shows that a majority of Russians reported in this survey that bribery is indeed a material burden. This question, asked of a nationally-representative sample of 1600 Russians, asks: "Has it occurred in the last five years that a government official requested or extorted from you an unofficial payment or service to solve some problems, and if yes, then what did you feel as a result?" The possible responses were that it was a materially burdensome experience, that it was not so materially burdensome, or that there had been no such experience in the last five years.

**Table 6.2:** Material Burden of Bribery

| | Percent of Respondents |
|---|---|
| Bribe not materially difficult | 43.4 |
| Bribe was materially difficult | 56.6 |

While not an overwhelming majority (likely due to the fact that the size of bribes varies substantially from context to context and region to region), nevertheless almost 57%

of respondents replied that the bribery they experienced what materially difficult for them. This calls into question any hypothesized 'normalization' of corruption wherein bribes are so insignificant in size that giving them is routine or low-cost. If this were the case, then any of the damage that corruption would do to attitudes or support for the regime would be purely normative rather than material. As it stands, bribe-paying does seem to have a material impact that could hurt attitudes via individuals' pocketbooks.

What about the normative, notional harm to attitudes towards the regime by having a bribery experience? In Tables 6.3, 6.4, 6.5, and 6.6 I look at respondents' descriptive reactions to the bribe experiences that they had.

**Table 6.3:** Reaction to Bribery: Surprise

| | Percent of Respondents |
|---|---|
| Not surprised at bribery experience | 81.5 |
| Surprised at bribery experience | 18.5 |

A small proportion of survey respondents—less than 19%—reported surprise at having to give a bribe. This speaks to the common nature of corruption in Russia, even if it does not in fact augur for indifference. Across all measures, very few individuals reported neutral or positive reactions to their corruption experiences. A majority were annoyed (59%), while only 12% said that the bribe they paid eased their interaction. A roughly 30% minority said that they were indifferent to the corruption they experienced.

It seems that Russians are not neutrally and certainly not positively disposed to the corruption they experience. Though they are rarely surprised at bribery in their lives,

**Table 6.4:** Reaction to Bribery: Annoyance

| | Percent of Respondents |
|---|---|
| Bribery experience did not generate annoyance | 41.5 |
| Bribery experience generated annoyance | 58.5 |

**Table 6.5:** Reaction to Bribery: Positive, Eased

| | Percent of Respondents |
|---|---|
| Bribery was not positive, did not ease things | 87.8 |
| Bribery was positive, eased things | 12.2 |

**Table 6.6:** Reaction to Bribery: Indifference

| | Percent of Respondents |
|---|---|
| Not indifferent to bribery experience | 70.7 |
| Indifferent to bribery experience | 29.3 |

they do not think of it as acceptable or unimportant. Finally, a strong majority of almost 70% of respondents said that they felt that the bribery they were compelled to engage in was 'amoral'. This is a clear indicator that corruption is negatively regarded. A simple correlation matrix below (Table 6.8) highlights that these reactions are very consistent and clustered into attitudes and reactions to corruption.

**Table 6.7:** Reaction to Bribery: Amorality

| | Percent of Respondents |
|---|---|
| Did not regard bribery as amoral | 30.6 |
| Regarded bribery as amoral | 69.4 |

**Table 6.8:** Correlation Matrix of Bribe Reactions

| | Materially Difficult | Surprised | Annoyed | Eased Life | Indifferent | Amoral |
|---|---|---|---|---|---|---|
| Materially Difficult | 1.000 | 0.012 | 0.370 | -0.243 | -0.228 | 0.298 |
| Surprised | 0.012 | 1.000 | 0.201 | -0.104 | -0.145 | 0.185 |
| Annoyed | 0.370 | 0.201 | 1.000 | -0.464 | -0.759 | 0.383 |
| Eased Life | -0.243 | -0.104 | -0.464 | 1.000 | -0.225 | -0.395 |
| Indifferent | -0.228 | -0.145 | -0.759 | -0.225 | 1.000 | -0.131 |
| Amoral | 0.298 | 0.185 | 0.383 | -0.395 | -0.131 | 1.000 |

### 6.2.2 Effects on Protest

To look for the deleterious effects of corruption experiences on satisfaction with the regime, I first look at the correlation between having personally experienced corruption with expressed willingness to actively participate in one key manifestation of dissatisfaction: public protest. The theoretical expectation is that, rather than being viewed as a neutral or even a simplifying positive regime feature, corruption acts as a driver of greater inclination to protest. To the extent that indicating a willingness to protest is a sincere expression of quite extreme dissatisfaction with the regime *even if it would not result in actual protest action being taken*, this evidence can be taken as a considerable threat to a regime concerned with keeping the public happy.

In Table 6.9, I show that having experienced a request for a bribe from a government official is strongly, positively correlated with indicating a willingness to protest. Using two related questions as dependent variables (Columns 1-3 and 4-6), and including a set of individual-level attitudinal covariates (in Columns 2, 3, 5, and 6) and region-year control variables (in Columns 3 and 6), I show that the positive, large, and statistically significant coefficient on *Bribe Experience* is found consistently across models.

**Table 6.9:** Experienced Corruption and Willingness to Protest

| | protest_could | | | protest_driven | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Bribe Experience | 0.152*** | 0.127*** | 0.125*** | 0.158*** | 0.112*** | 0.110*** |
| | (0.005) | (0.006) | (0.006) | (0.006) | (0.007) | (0.007) |
| UR Supporter | | −0.078*** | −0.079*** | | −0.068*** | −0.068*** |
| | | (0.005) | (0.005) | | (0.005) | (0.005) |
| Putin Approval | | −0.068*** | −0.068*** | | −0.122*** | −0.122*** |
| | | (0.005) | (0.005) | | (0.006) | (0.006) |
| Governor Approval | | −0.013** | −0.013** | | −0.046*** | −0.046*** |
| | | (0.005) | (0.005) | | (0.006) | (0.006) |
| Regional Satisfaction | | −0.096*** | −0.094*** | | −0.140*** | −0.140*** |
| | | (0.005) | (0.005) | | (0.006) | (0.006) |
| Log GRP | | | 0.039** | | | 0.010 |
| | | | (0.016) | | | (0.019) |
| Pct Russian | | | 0.092 | | | 0.061 |
| | | | (0.062) | | | (0.090) |
| Log Population | | | −0.073*** | | | −0.014 |
| | | | (0.019) | | | (0.023) |
| Republic/city/AO | | | −0.002 | | | −0.060 |
| | | | (0.028) | | | (0.041) |
| Pct Urban Pop | | | −0.010 | | | 0.186 |
| | | | (0.092) | | | (0.128) |
| Scheduled End of Term | | | 0.028*** | | | 0.005 |
| | | | (0.007) | | | (0.008) |
| Petrov Competitiveness | | | 0.004 | | | −0.004 |
| | | | (0.009) | | | (0.014) |
| Male | 0.051*** | 0.022*** | 0.023*** | 0.019*** | −0.011** | −0.010** |
| | (0.004) | (0.005) | (0.005) | (0.004) | (0.005) | (0.005) |
| Education | 0.022*** | 0.012*** | 0.012*** | 0.031*** | 0.015*** | 0.015*** |
| | (0.002) | (0.003) | (0.003) | (0.002) | (0.003) | (0.003) |
| Age | −0.035*** | −0.042*** | −0.042*** | −0.006*** | −0.013*** | −0.013*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.003) | (0.003) |
| Income | −0.025*** | −0.023*** | −0.025*** | −0.029*** | −0.027*** | −0.027*** |
| | (0.003) | (0.004) | (0.004) | (0.003) | (0.004) | (0.004) |
| Urban Rural | 0.014*** | 0.005 | 0.005 | 0.037*** | 0.028*** | 0.030*** |
| | (0.004) | (0.005) | (0.005) | (0.005) | (0.006) | (0.006) |
| Constant | 0.153*** | 0.339*** | 0.806*** | 0.362*** | 0.617*** | 0.519** |
| | (0.030) | (0.028) | (0.160) | (0.014) | (0.015) | (0.223) |
| Number of regions | 74 | 74 | 74 | 74 | 74 | 74 |
| Number of years | 2 | 2 | 2 | 2 | 2 | 2 |
| N | 60,732 | 36,995 | 36,617 | 61,304 | 37,526 | 37,145 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.

Keeping in mind the caveats about causal interpretation of this non-randomized survey data discussed earlier, the estimated effect of corruption experiences on willingness to protest is substantively quite large. It maintains an effect size of 11 to 16 percentage points, which represents almost half of the average reported willingness to protest (about 27%). Indeed, as both this covariate of interest and the dependent variable are dichotomous and the models presented here are linear probability models, we can note that the marginal effect of having a corruption experience is much larger than any other covariate included.

These results strongly support the fundamental assumptions of the theory presented in Chapter 2, which contend that autocrats and governors are acutely aware of—indeed, worried by—dissatisfaction and unrest that could threaten their regimes' stability. This unrest is likely to take the form of street protest, which can have a number of harmful effects on the regime.[2]

### 6.2.3 Effects on Trust and Satisfaction

Beyond reported willingness to protest, direct measures of how much respondents trust state actors or are satisfied with their leaders' work are useful indicators of overall attitude towards the regime. This overall attitude is then closely tied to being motivated to protest, turning out to vote for regime-supported candidates in authoritarian elections, and other aspects of cooperation with the state.

Columns 1-6 of Table 6.10 demonstrate face validity of the 'work' that the corruption experience indicator variable is doing. In all of these models, having experienced bribery

[2]Lorentzen (2013) notes that protest can be a good thing from the regime's perspective in some cases, as when it can be highly informative without posing a risk to the regime.

makes respondents less likely to think that the governor is handling corruption well (columns 1 and 2) and more likely to indicate that corruption among the authorities or law enforcement is one of the top 5 worries in everyday life (columns 3-6).

**Table 6.10:** Political Competition and Experienced Corruption

| | govhandlecorrup_well | bigworry_corrupauth | bigworry_corruplawenf | regionsatis |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| male1 | 0.008*** | 0.053*** | 0.049*** | 0.023*** |
| | (0.003) | (0.004) | (0.004) | (0.004) |
| educ.num | −0.002 | 0.026*** | 0.020*** | −0.022*** |
| | (0.002) | (0.002) | (0.002) | (0.003) |
| age.c | 0.002* | 0.005*** | −0.003 | 0.010*** |
| | (0.001) | (0.002) | (0.002) | (0.002) |
| income.c | 0.00004 | 0.024*** | 0.022*** | 0.039*** |
| | (0.002) | (0.003) | (0.003) | (0.003) |
| urban1 | −0.010*** | 0.022*** | 0.021*** | 0.013*** |
| | (0.003) | (0.005) | (0.004) | (0.005) |
| bribe_request | −0.001 | 0.066*** | 0.051*** | −0.066*** |
| | (0.004) | (0.006) | (0.005) | (0.006) |
| voted_ur | 0.003 | −0.023*** | −0.016*** | 0.070*** |
| | (0.003) | (0.004) | (0.004) | (0.005) |
| putingood | 0.029*** | −0.033*** | −0.022*** | 0.146*** |
| | (0.003) | (0.005) | (0.004) | (0.005) |
| govgood | 0.120*** | −0.010** | −0.013*** | 0.359*** |
| | (0.003) | (0.005) | (0.004) | (0.005) |
| regionsatis | 0.045*** | −0.024*** | −0.011*** | |
| | (0.003) | (0.005) | (0.004) | |
| lngdp | −0.013 | −0.014 | 0.004 | 0.090*** |
| | (0.012) | (0.013) | (0.010) | (0.023) |
| pctRussian1 | 0.021 | −0.017 | −0.027 | −0.085 |
| | (0.046) | (0.049) | (0.037) | (0.088) |
| lnpop | 0.015 | 0.037** | 0.023** | −0.053** |
| | (0.014) | (0.015) | (0.011) | (0.026) |
| republiccityao | 0.009 | 0.033 | 0.009 | 0.006 |
| | (0.021) | (0.022) | (0.017) | (0.040) |
| pcturban | 0.013 | −0.033 | −0.018 | −0.021 |
| | (0.068) | (0.072) | (0.054) | (0.131) |
| sched4 | −0.027*** | −0.014** | −0.014** | 0.007 |
| | (0.005) | (0.007) | (0.005) | (0.007) |
| demnar3.c | 0.008 | 0.001 | −0.005 | −0.031** |
| | (0.007) | (0.007) | (0.005) | (0.013) |
| Constant | −0.052 | −0.188 | −0.263*** | −0.176 |
| | (0.120) | (0.127) | (0.097) | (0.231) |
| Number of regions | 74 | 74 | 74 | 74 |
| Number of years | 2 | 2 | 2 | 2 |
| N | 40,032 | 40,032 | 40,032 | 40,032 |
| Log Likelihood | −9,276.094 | −24,653.400 | −18,201.590 | −25,997.990 |
| BIC | 18,774.730 | 49,529.340 | 36,625.720 | 52,207.920 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

The rightmost columns of Table 6.10 show a strong, deleterious effect of corruption

experiences on reported satisfaction with how things are going in the region. Respondents who have experienced bribery are up to 10 percentage points less likely to say that they think that things are going well in the region overall. Bribery has negative effects on the public's attitudes beyond driving them to protest. This idea is further supported Table 6.11, showing that bribery also harms trust in the government and state.

Similarly, Table 6.11 shows that having experienced bribery is strongly negatively associated with trust in three important aspects of the regime: the police, authorities in general, and the sitting government. Measures of trust in these institutions, each on a five point scale, are used as dependent variables in columns 1 and 4, 2 and 5, and 3 and 6, respectively.

Regardless of whether only basic demographic controls are included (columns 1 through 3) or a measure of regime support (voting for United Russia) and a baseline measure of trust in a non-regime institution, the UN, are included, the conclusion remains the same. Having experienced petty corruption is associated with a fifth to more than a third of a full point decrease in trust. The exception is in column 6, where being a United Russia supporter seems to be so closely correlated with trust in the government that corruption is not found to have a large or statistically significant association with trust in the government. These estimated coefficients are of magnitude easily comparable or surpassing the magnitudes of the coefficients on demographic characteristics, hinting at a quite substantial relationship. It seems that bribery can indeed drastically harm individuals' trust in state and regime institutions.

**Table 6.11:** Experienced Corruption and Trust

| | Trust in ... | | | | | |
|---|---|---|---|---|---|---|
| | Police | Authorities | Gov't | Police | Authorities | Gov't |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Bribe Experience | −0.365*** | −0.363*** | −0.219*** | −0.306*** | −0.229*** | −0.041 |
| | (0.077) | (0.081) | (0.083) | (0.085) | (0.085) | (0.085) |
| UR Supporter | | | | 0.316*** | 0.515*** | 0.807*** |
| | | | | (0.062) | (0.061) | (0.062) |
| Trust in UN | | | | 0.230*** | 0.360*** | 0.293*** |
| | | | | (0.030) | (0.029) | (0.030) |
| Male | −0.227*** | −0.174*** | −0.192*** | −0.162*** | −0.087 | −0.082 |
| | (0.053) | (0.056) | (0.057) | (0.059) | (0.059) | (0.060) |
| Age | 0.106*** | 0.060* | 0.052* | 0.106*** | 0.050 | 0.037 |
| | (0.029) | (0.031) | (0.032) | (0.033) | (0.033) | (0.033) |
| Education | 0.020 | −0.024 | 0.023 | 0.038 | 0.013 | 0.033 |
| | (0.029) | (0.031) | (0.031) | (0.032) | (0.032) | (0.032) |
| Employed | −0.029 | −0.055 | −0.071 | 0.009 | −0.024 | −0.036 |
| | (0.063) | (0.066) | (0.068) | (0.071) | (0.071) | (0.071) |
| Income | 0.034 | 0.048 | 0.078** | 0.033 | 0.033 | 0.050 |
| | (0.034) | (0.036) | (0.037) | (0.038) | (0.037) | (0.038) |
| Urban Rural | −0.238*** | −0.153** | −0.058 | −0.239*** | −0.075 | −0.020 |
| | (0.066) | (0.070) | (0.072) | (0.074) | (0.073) | (0.074) |
| Constant | 3.307*** | 3.257*** | 3.331*** | 2.427*** | 1.811*** | 1.991*** |
| | (0.112) | (0.114) | (0.120) | (0.153) | (0.147) | (0.149) |
| N | 1,177 | 1,178 | 1,167 | 837 | 838 | 834 |

*p < .1; **p < .05; ***p < .01

## 6.3 Effect of End of Term Conditional on Governor Popularity

In the previous section I showed that corruption experiences seem to directly cause, or at least be closely associated with, various assessments of individuals' support for the regime. I now return to the interaction of the autocrat, governors, and the public. Using the same empirical approach and data as in earlier chapters, I introduce three proxy measures for governor popularity. The dependent variable in these models is once again the dichotomous response of having experienced bribery.

I seek to test the proposition that governors respond differentially to their ends-of-

term when they are already unpopular or when they face protest action. Unfortunately, no region-year data of sufficient detail and quality on protest events is currently available in Russia, nor are consistent and comprehensive assessments of governors' popularity. I use three proxy measures of popularity and overall governor performance to capture the overall concepts of popularity and protest. I interact each in turn with the *Scheduled End of Term* indicator, looking for positive coefficients on the interaction terms that would demonstrate that popular governors are less pressed to decrease corruption in end-of-term years. The three proxy measures are: an individual-level assessment of how well respondents think the governor is doing at his job and two publicly-available ratings of the effectiveness and positive image in the media of each governor, published by the Fund for the Development of Civil Society.[3]

As shown in Table 6.12, none of the expected results are found in this analysis. None of the interaction term coefficients are near statistical significance at traditional levels. What is more, the estimated coefficients are only in one of three cases in the expected direction. While it is difficult to be sure of the reasons that no support is found for the idea that governors who are popular are less threatened by end-of-term shocks, it should be noted that very few years or regions of data are available for any of the key predictors. This limits the sample size at the second level of the multilevel models greatly. It also may simply be the case that popularity, at least as measured by these crude proxies, is not a significant factor on the minds of governors when they are faced with an end of their term in office. Perhaps only larger, more credibly damaging manifestations of discontent are sufficient to

[3]See, for example, this page with the latest ratings: http://civilfund.ru/mat/101.

**Table 6.12:** Governor Effectiveness and Competition

| | DV: Bribe Experience | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Scheduled End of Term | −0.010** | −0.059** | −0.084*** |
| | (0.004) | (0.027) | (0.029) |
| Governor Approval | −0.032*** | | |
| | (0.003) | | |
| Gov'r Approval X Sched End Term | 0.005 | | |
| | (0.005) | | |
| Governor Effectiveness | | 0.022 | |
| | | (0.015) | |
| Gov'r Effective X Sched End Term | | −0.011 | |
| | | (0.022) | |
| Governor Media Image | | | 0.029 |
| | | | (0.043) |
| Gov'r Image X Sched End Term | | | −0.015 |
| | | | (0.040) |
| Male | 0.038*** | 0.070*** | 0.070*** |
| | (0.002) | (0.016) | (0.015) |
| Education | 0.028*** | 0.014* | 0.014* |
| | (0.001) | (0.009) | (0.008) |
| Age | −0.045*** | −0.020** | −0.020** |
| | (0.001) | (0.008) | (0.008) |
| Income | 0.021*** | 0.023** | 0.024*** |
| | (0.002) | (0.009) | (0.009) |
| Urban Rural | 0.028*** | 0.0001 | −0.007 |
| | (0.002) | (0.018) | (0.018) |
| Constant | 0.056** | 0.135* | 0.151** |
| | (0.025) | (0.077) | (0.067) |
| Number of regions | 76 | 49 | 49 |
| Number of years | 4 | 2 | 2 |
| N | 106,572 | 2,475 | 2,525 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

cause a governor to reduce corruption very sharply when political competition is high.

## 6.4 Focus of Corruption Reduction on Likely Protesters

One final notable implication of the theory presented and tested in earlier chapters is that governors may try to be *discerning* in who experiences corruption. If they are able to

approximately distinguish between those who are most likely to be made discontent or to protest as a result of experiencing bribery and those who are safe supporters of the regime, then they can attempt to more efficiently 'target' bribery. By continuing to extract some corruption rents from unquestioning regime supporters even in political competitive times, they can continue to enrich themselves and co-opt insiders, while efficiently minimizing the risk of protest or popular anger.

I test this prediction by interacting the *Scheduled End of Term* indicator variable and Petrov-Titkov measure of political competitiveness with respondents' self-reported probability of protesting if their situation gets too bad. While of course neither governors nor their agents are able to directly observe the likelihood that an individual will protest, it is very plausible that they could make educated guesses about what types of individuals should be avoided and what types are safe for bribe-taking. If this is the case that targeting of corruption is possible with acceptable accuracy, then the efficiency of corruption is increased.

The expectation is that in times of high political competition, individuals who indicate that they could see themselves protesting will experience even less corruption than those who could not see themselves protesting. The result should be negative coefficients on the interactions of political competition and protest probability.

The evidence for this idea is mixed, as shown in Table 6.13. In one specification (Column 1), individuals who say they could see themselves protesting actually experience more corruption in competitive (end-of-term) times than those who could not. This is the opposite of the proposed effect. When additional region-year controls are included (Column

2), this coefficient loses statistical significance.

However, measuring political competitiveness using the Petrov-Titkov expert score (Columns 3 and 4) supplies more supportive evidence. Here, likely protesters in competitive regions are much less likely to experience corruption than are unlikely protesters in competitive regions. In other words, where competitiveness is high, all members of the public are spared from corruption to some extent, but those who are most likely to take to the streets are spared much more. These likely protesters in competitive regions experience bribery at half the rate that unlikely protesters do.

## 6.5 Conclusion

In this chapter I have provided a deeper look at what petty corruption is for those who experience it in modern-day Russia. I examined its effects on attitudes and (potential) behaviors that I have earlier argued and assumed are of crucial importance for autocratic leaders. By showing that experiences with bribery are strongly associated with less trust in the government and with more willingness to engage in street protest, I have sought to demonstrate the fundamental plausibility of this authoritarian regime's concern with petty corruption levels. What is more, I have provided tentative evidence that governors are aware that their popularity may mitigate the risk of protest over corruption and that autocratic leaders may be discerning in what types of people are more exposed to corruption.

In previous chapters, I showed that Russian governors react to the increased risk of losing their jobs that is associated with a scheduled end of a term in office by reducing petty corruption. I argue that they do this because they know that such times of high political

competition are when the public and the autocrat on whom their jobs depend are monitoring their performance closely. However, this mechanism relies on the assumption that does in fact react negatively to petty corruption. In this chapter, I have shown that this is emphatically the case. Experiences with petty corruption are not regarded by Russians as useful 'greasing the wheels,' as neutral, unimportant occurrences, nor as the responsibility of bribe-taking bureaucrats alone. Rather, the Russian public does seem to hold the broader regime responsible for such corruption and accordingly reports lowered trust in the government, more willingness to protest, and less satisfaction with the regime.

Also, by showing that the public is not indifferent to or neutrally disposed to bribery experiences, I underline the fact that—more than just because of rare-but-potent revolutionary spirit—authoritarian publics matter. Their experiences with public goods and public bads like corruption shape their attitudes towards the regime that governs them. This is a prime concern for regimes that are so focused on stability and complacence. I also emphasize that the findings presented in this chapter highlight the importance of further, deeper research into public opinion in autocracies. While the links between public opinion, governance, policy, and alternation in power are certainly much weaker in autocracies than in democracies, too often political science research assumes away these publics in favor of a focus on elites. These publics hold divergent beliefs and attitudes which, important as they are for the authoritarian regimes themselves to understand, are important for political science to understand as well.

One avenue for further inquiry is to investigate how the public reacts to personal experiences with petty corruption as compared to information in the media about high-level officials engaging in grand corruption. It is unclear *a priori* how beliefs about corruption

at low levels and at high levels may interact. For example, it is possible that hearing of a prominent arrest of a cabinet official[4] could form a positive impression of 'cleaning up the avenues of power' for individuals who have not personally experienced bribery, while it could reinforce a sense that the authorities are corrupt through-and-through for those who have. Further investigation, including exploration of exogenous shocks to corruption beliefs, remains a promising area of research.

[4]Prominent cases of this are appearing with startling, increased frequency as of this writing. The first arrest of a sitting minister in Russia in many decades, Aleksey Ulyukaev, on November 15, 2016, on seemingly trumped-up bribery charges is particularly glaring.

**Table 6.13:** Political Competition, Protest, and Experienced Corruption

| | DV: Bribe Experience | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Could Protest | 0.092*** | 0.082*** | 0.103*** | 0.089*** |
| | (0.004) | (0.005) | (0.004) | (0.005) |
| Scheduled End of Term | −0.010** | −0.002 | | |
| | (0.005) | (0.007) | | |
| Could Protest X Sched End Term | 0.018** | 0.008 | | |
| | (0.007) | (0.010) | | |
| Petrov Competitiveness | | | −0.015* | −0.007 |
| | | | (0.008) | (0.010) |
| Could Protest X Petrov Compet. | | | −0.016*** | −0.014*** |
| | | | (0.004) | (0.005) |
| UR Supporter | | −0.013*** | | −0.013*** |
| | | (0.004) | | (0.004) |
| Putin Approval | | −0.027*** | | −0.028*** |
| | | (0.004) | | (0.004) |
| Governor Approval | | 0.001 | | 0.0005 |
| | | (0.004) | | (0.004) |
| Regional Satisfaction | | −0.040*** | | −0.040*** |
| | | (0.004) | | (0.004) |
| Log GRP | | −0.030* | | −0.028* |
| | | (0.016) | | (0.016) |
| Pct Russian | | −0.061 | | −0.071 |
| | | (0.064) | | (0.064) |
| Log Population | | 0.048** | | 0.049** |
| | | (0.019) | | (0.019) |
| Republic/city/AO | | −0.003 | | −0.011 |
| | | (0.028) | | (0.029) |
| Pct Urban Pop | | −0.084 | | −0.057 |
| | | (0.092) | | (0.094) |
| Male | 0.044*** | 0.040*** | 0.044*** | 0.040*** |
| | (0.003) | (0.004) | (0.003) | (0.004) |
| Education | 0.018*** | 0.015*** | 0.018*** | 0.015*** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Age | −0.031*** | −0.033*** | −0.031*** | −0.033*** |
| | (0.001) | (0.002) | (0.001) | (0.002) |
| Income | 0.033*** | 0.035*** | 0.033*** | 0.035*** |
| | (0.002) | (0.003) | (0.002) | (0.003) |
| Urban Rural | 0.021*** | 0.023*** | 0.021*** | 0.023*** |
| | (0.003) | (0.004) | (0.003) | (0.004) |
| Constant | 0.031 | −0.108 | 0.032 | −0.155 |
| | (0.037) | (0.162) | (0.037) | (0.167) |
| Number of regions | 74 | 74 | 74 | 74 |
| Number of years | 2 | 2 | 2 | 2 |
| N | 60,732 | 36,617 | 60,732 | 36,617 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.

# 7 | Improving Corruption Measurement with MRP

In previous chapters I exploited a powerful new data set that measured corruption—the outcome variable in my theory and analyses—using a direct, survey-based approach. This data set, combined with a measure of political competition arising from scheduled ends of terms in office of Russian governors, allowed me to make causally-identified inferences about the effects of political competition on corruption. In other words, I captured change in corruption from region to region and year to year. Another use of this data is not for inference—not using these measures of corruption as outcome variables—but for descriptive and predictive purposes. For this task, the measures introduced earlier into multilevel regressions must be appropriately processed to ensure that *levels* of corruption are estimated accurately rather than simple *changes* to levels of corruption.

To this end, in this chapter I employ multilevel regression and poststratification (MRP) to estimate average levels of experienced corruption at the level of the Russian subnational polity. By integrating large waves of surveys of the Russian population with detailed census information, these estimates exhibit the most accurate picture possible of trends in bribery in Russia. This represents an important improvement over existing mea-

sures of corruption in several ways. It avoids difficulties of validity, reproducibility, and generalizability that are inherent to perceptions-based expert assessments of corruption levels. It also allow for estimation of aggregate prevalence of true corruption experiences at levels of observation that are not otherwise accessible. In other words, where traditional measurement techniques are unable to provide reliable measures of corruption at less than the national level, MRP allows for a deeper look at what the data has to say—precise estimation of corruption prevalence in subnational units or within population subgroups are easily within reach. By bringing the insights offered by MRP from the realm of state-level estimates of public opinion in the United States to measures of *experiences* in Russia, I contribute both to the methodology of MRP and to measurement of corruption. [1]

Multilevel regression and poststratification (MRP) is a quickly-developing technique for data analysis that allows for the easy combination of public opinion surveys and census data to predict aggregate public opinion. When the desired predicted quantity is an average at the level of a geographic area, for example, MRP performs better than simply taking the mean of survey responses in that area (Lax and Phillips 2009). So, in effect, MRP 'smooths out' the fact that surveys often do not contain large or representative samples within all geographical areas of interest. It also simultaneously corrects for poor sampling procedures, makes the fullest use of available data due to the partial pooling inherent in multilevel modeling, and allows for flexible prediction of quantities of interest other than simple geographical averages.

[1]The MRP estimates presented here are of particular use as predictors in quantitative analyses and as descriptive measures. While they could function as dependent (outcome) variables in regressions, such a 'two-step' estimation procedure would be inefficient and have to contend with appropriate inclusion of uncertainty. For this reason, all proceeding analyses in this project have followed a 'one-step' multilevel modeling procedure that avoids these difficulties.

Aside from its instrumental use, this implementation of MRP is important in several other ways. It represents a novel application of the method outside of the United States and, as such, offers a number of opportunities for learning about how census data, survey data, and region-level data interact to produce high- or low-quality MRP estimates. I also extend existing procedures by showing how model uncertainty from the multilevel regression step of MRP can be used to generate estimates of the uncertainty around MRP estimates. Finally, I show that MRP need not be limited to estimates of individual-level public opinion. I use several surveys of Russian firms and a pseudo-census of all active firms in Russia to generate MRP estimates of average rates of bribery experienced by firms.

The MRP measure I develop here represents a significant advance over existing data, which are either based on subjective expert assessment or capture a small number of regions in a small-sample snapshot. MRP is a powerful technique that uses national survey data to generate reliable estimates at a level much lower and detailed than would otherwise be possible (Park, Gelman and Bafumi 2004, 2006; Gelman and Little 1997; Ghitza and Gelman 2013). Using MRP here offers a number of benefits over existing estimates of regional-level corruption that are not based on experienced measures, focus on grand corruption, and ignore possible bias arising from the sensitive nature of the topic. Best practices regarding modeling issues such as the sensitivity of MRP estimates to inclusion of various second-level predictors, correct incorporation of uncertainty in MRP estimates, and reliability of MRP estimates in general (and in potentially 'unstable' contexts outside of familiar attitudes of the U.S. population) are still very much in flux, so I follow the approaches and advice given in recent research (Lax and Phillips 2013; Buttice and Highton 2013).

Though all MRP estimates are necessarily subject to substantial uncertainty (and,

arguably, high sensitivity to modeling and specification choices), the estimates of regional-level petty corruption that I provide here offer several important advantages over existing measures. They continue the string of responses to Treisman's (2007) call for greater use of experience-based measures of corruption over measures of perceived corruption. Second, they are recent and easily repeatable. Third, they are likely more accurate than existing survey-based experiential measures, as they are based on recent advances in sensitive question survey technology. In addition, the MRP method of analysis offers all assumptions and modeling decisions up for explicit display. This increases the transparency, robustness, and reproducibility of the estimates.

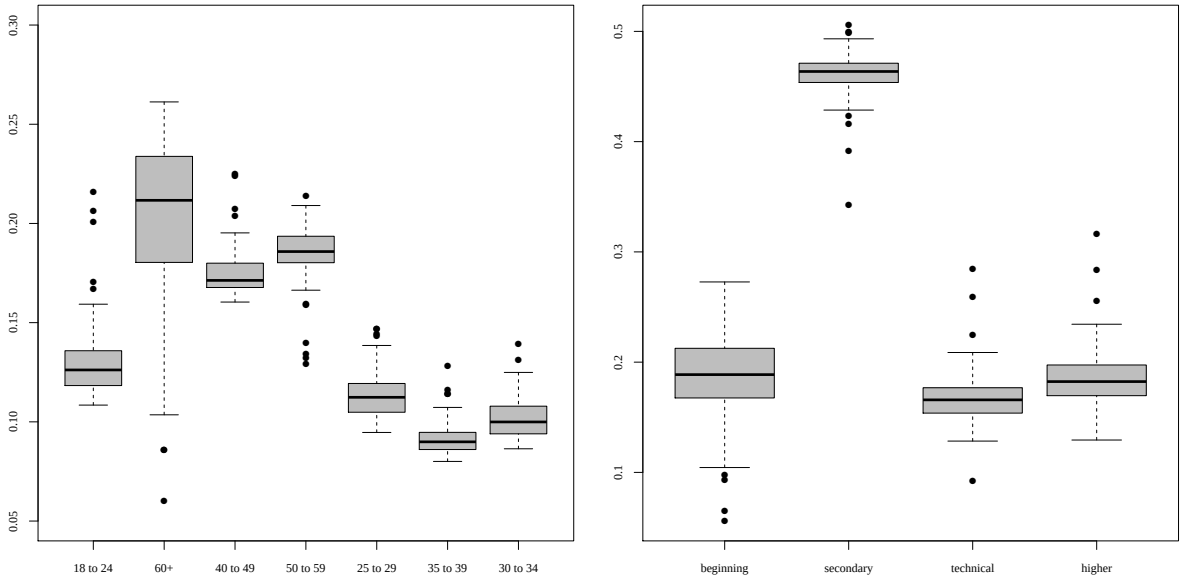
## 7.1 Data and Design

The primary data source for my MRP analyses is the set of survey data presented in Chapter 3. Due to their unusually large sample size, this data set is dominated by several surveys from the GeoRating project, conducted by the well-regarded Russian survey firm 'Public Opinion Fund' (known as 'FOM' in Russian). This full project is comprised of 36 waves of surveys of about 50 questions each from 2003 to 2011. Most waves consist of 500 respondents from each of about 69 regions, for total samples of approximately 35000. The questions asked vary quite widely from wave to wave, with only a few basic questions and some simple demographics being repeated in every wave. Only four waves offer questions about experienced corruption. For some preliminary analyses I present here, I focus on one wave – from 2011. This survey was conducted on 52644 respondents in 74 regions.

### 7.1.1 Russian Census Data

In this section I provide basic information on the Russian census data underlying the post-stratification step of my MRP procedure. As most implementations of MRP are on US states, cities, or electoral districts, it is important to examine and 'validate' new census data before including them in analysis. In particular, it can be useful to explore the extent of variation across demographic cells in order to better understand how much regions vary from each other and how well these demographic cells capture quantities of theoretical interest in the response model.

**Figure 7.1:** Census Education and Age by Region




Another larger set of GeoRating survey waves provides a consistent view of a different question: when do respondents see corruption as one of the most important or troubling social

or economic problems in their region? The response "corruption, bribetaking in government structures" is included in a list of issues within a five-response question on which issues are seen as most troubling. This question is included in 13 survey waves from 2007 to 2011.

## 7.2 Pooled MRP

The simplest approach to MRP modeling of complex data such as the collection of surveys presented in Chapter 3 is to pool the responses over time. After all, none of the surveys included in my data set sample from *all* regions of Russia, and most sample from a small subset of all of the more than 80 regions comprising the Russian Federation. This introduces the problem of how to (or whether to) make reasonable out-of-sample predictions for regions that are sampled infrequently or not at all. The simples and most robust solution is to pool all surveys over time and produce estimates of average corruption over the full time period in each region. In a later section I extend this by considering approaches to full time series cross-sectional estimation.

### 7.2.1 The MRP Response Model

The first 'stage' of MRP consists of estimating a rather simple multilevel 'response' model on the national survey data. The model I estimate is presented below as Equation 7.1. The intercept of this model is allowed to vary for each factor: gender, age (transformed into a seven-category ordinal scale), education, urban or rural residence, and the respondent's region. The dependent variable in all models is *Bribery Experience*, the dichotomous yes-no response to the question "Have you in the last year or two personally encountered a situation

where any government official requested or expected an unofficial payment or service from you for his or her work?"

$$\Pr(y_c = 1) = \text{logit}^{-1}(\alpha^0 + \alpha^{gender}_{j[c]} + \alpha^{age}_{k[c]} + \alpha^{educ}_{l[c]} + \alpha^{urban}_{r[c]} + \alpha^{region}_{n[c]}) \quad (7.1)$$

$$\alpha^{gender}_j \sim N(0, \sigma^2_{gender}), \text{for } j = 1, 2 \quad (7.2)$$

$$\alpha^{age}_k \sim N(0, \sigma^2_{age}), \text{for } k = 1, ..., K \quad (7.3)$$

$$\alpha^{educ}_l \sim N(0, \sigma^2_{educ}), \text{for } l = 1, ..., L \quad (7.4)$$

$$\alpha^{urban}_m \sim N(0, \sigma^2_{urban}), \text{for } m = 1, ..., M \quad (7.5)$$

$$\alpha^{region}_r \sim N(0, \sigma^2_{region}), \text{for } r = 1, ..., R \quad (7.6)$$

The individual-level (response) models I employ to generate the estimates above are logistic multilevel models estimating using *glmer()* in R. In this study I primarily use a slightly different model to that shown above—I replace Equation 5 with Equation 6. This model includes a set, $X_m$, of region-level predictors (RLPs) that improve the model's performance.

$$\alpha^{region}_{\text{R}} \sim N(\alpha^{region}_{q[r]} + \beta \cdot X_r, \sigma^2_{region}), \text{for } r = 1, ..., R \quad (7.7)$$

The current state of research on MRP estimation offers little in the way of guidance on model selection. An exception is a working paper by Lax and Phillips (2013), which, while useful, is acknowledgedly both preliminary and developed with application to typical public opinion data from the United States in mind. Of particular interest is the choice of region-level predictors (RLPs, equivalent to state-level predictors in American politics

application), as I discuss above. Including one RLP has been shown to improve the accuracy of the MRP estimation procedure, but it is not currently known how widely this applies or within what limits. Inclusion of RLPs introduces a tradeoff between bias and efficiency and, in current practice, is largely left to educated guesswork informed, to the extent possible, by researchers' substantive theoretical knowledge.[2]

$$\theta_c \quad = \quad \text{logit}^{-1}(\beta^0 + \alpha_C) \tag{7.8}$$

### 7.2.2 Post-stratification

Having acquired random effect point estimates for demographic variables using one of the above response models, I continue to the second step of the MRP procedure: poststratification. Here I follow standard practice and apply the random effects to each cell of the demographic data contained in a population census of Russia. Aggregating by region then generates the estimated levels of experienced petty corruption among officials separately for each of Russia's regions. This is done by summing all cells' predicted probability of having experienced corruption, $\theta_c$, and weighting them by $N_c$, their true population frequency in each region according to the census.

$$y_r^{MRP} \quad = \quad \frac{\sum_c N_c \theta_c}{\sum_c N_c} \tag{7.9}$$

[2]Note that I do not include any variables measuring institutions as predictors in the MRP multilevel model. Given the little guidance on what (or how many) predictors should be included in MRP, I have opted to avoid including (potentially) questionably-measured institutional variables that are conceptually very close to the outcome variable, preferring to include only nicely-predictive structural variables. And only a small number of these predictors are included, which yet further acts to prevent possible overfitting.

Having obtained random effect point estimates for demographic variables using one of the above response models, I continue to the second step of the MRP procedure: poststratification. Here I follow standard practice and apply the random effects to each cell of the demographic data contained in a population census of Russia.[3] Aggregating by region then generates the estimated levels of experienced petty corruption among officials separately for each of Russia's regions. This is done by summing all cells' predicted probability of having experienced corruption, $\theta_c$, and weighting them by $N_c$, their true population frequency in each region according to the census.

$$y_r^{MRP} = \frac{\sum_c N_c \theta_c}{\sum_c N_c} \tag{7.10}$$

### 7.2.3 MRP Estimates

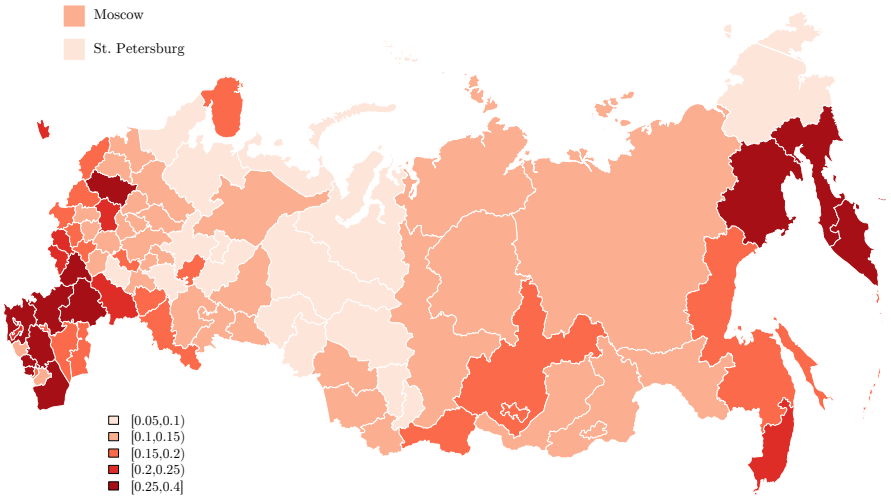
The estimation procedure outlined above produces the following results.

## 7.3 Extending MRP

In previous sections I have demonstrated the use of MRP when applied to measures beyond public opinion—in this case, to experiences with corruption—and to contexts outside of US states. In this section I explore several modest methodological additions to MRP as it is currently implemented. I demonstrate one simple way of assessing the uncertainty associated with MRP estimates. I also show how MRP estimates can be reweighted to fit research needs,

[3]A brief descriptive presentation of the characteristics of this Russian census data is given in the appendix.

**Figure 7.2:** Map of MRP Corruption Estimates (2011)



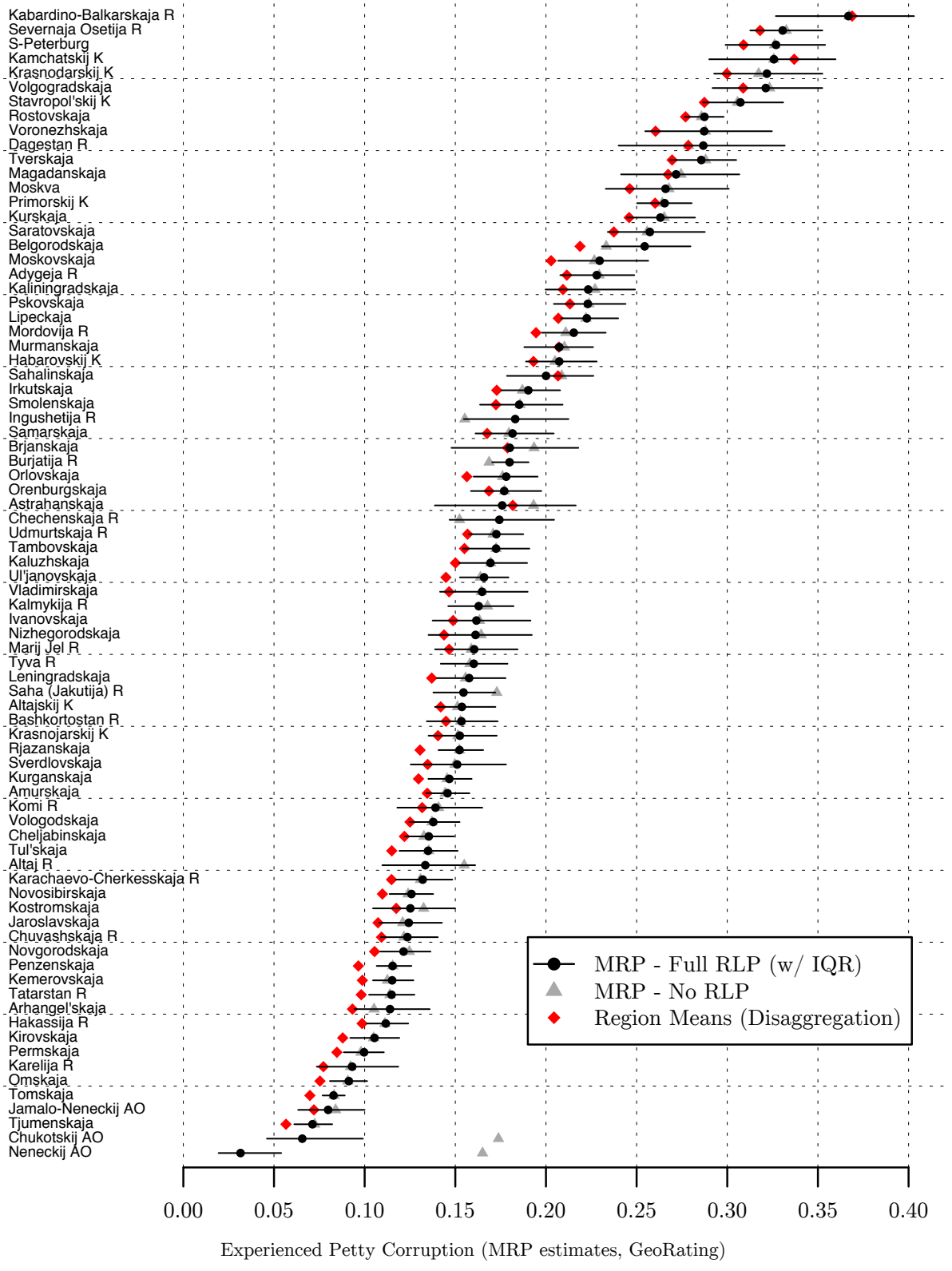

such as by reweighting to account for potential sensitive question bias. Finally, I develop a simple diagnostic technique that can be used to learn more about which aspects of the MRP estimation procedure are doing the most 'work' in generating valid estimates.

### 7.3.1 Uncertainty and MRP Estimation

In addition to producing standard MRP point estimates, I also produce and present the first applied usage (to my knowledge) of the full uncertainty to which MRP estimates are subject. Unlike in existing published work, I use a simulation procedure to carry the model-based uncertainty from the response stage through to the final MRP estimates. This uncertainty is reflected in the error bars shown later in Figure 7.4. Using the *sim()* function, I generate 1000 draws from the *glmer()* response model objects. I then calculate MRP estimates for each of the 1000 draws, a procedure which results in a distribution of MRP estimates that

reflects the variance and covariance structure of the parameters estimated in the response model. The region-level means or medians can then be used as point estimates and standard deviations or quantiles can be used to represent the modeling uncertainty. Future versions of this work will combine this step and the inference shown later into one fully Bayesian estimation step using Stan.

**Figure 7.4:** MRP Estimates with Uncertainty



### 7.3.2 Adjusting MRP Estimates Using List Experiments

One powerful advantage of using MRP is the transparency of all steps of the procedure. This can also allow adjustment of MRP estimates at the poststratification stage. Since this step of MRP simply involves calculating point estimates for each of a large number of (usually) demographic cells, it is easy to apply any desired adjustments to each cell.

One salient example of when this adjustment may be desirable is correction for possible sensitive question bias. If one can obtain reasonable estimates for the bias in the answers of respondents in each cell, this bias can be corrected for at the cell level. While direct poststratification of list experiment data is technically possible, the uncertainty that is intentionally designed into list experiment designs makes precise estimation of the cell-level random effects very demanding on data and sample size, rendering this unadvisable in most real-world applications. So using the information gleaned from simple list experiment analysis to correct 'plain old' survey responses for sensitive question bias is attractive and flexible. It is also trivial to assess uncertainty and to conduct analysis of the sensitivity of results to various plausible forms and levels of sensitive question bias (or other bias).

I present here just such an adjustment of the MRP corruption estimates presented above. This is currently presented as a proof-of-concept, as the cell-level estimates shown here are examples only.[4] As we shall see, these sensitive bias corrections in MRP generally have little substantive effect on the overall MRP estimates. Reasons for this are explored in Section 7.3.3.

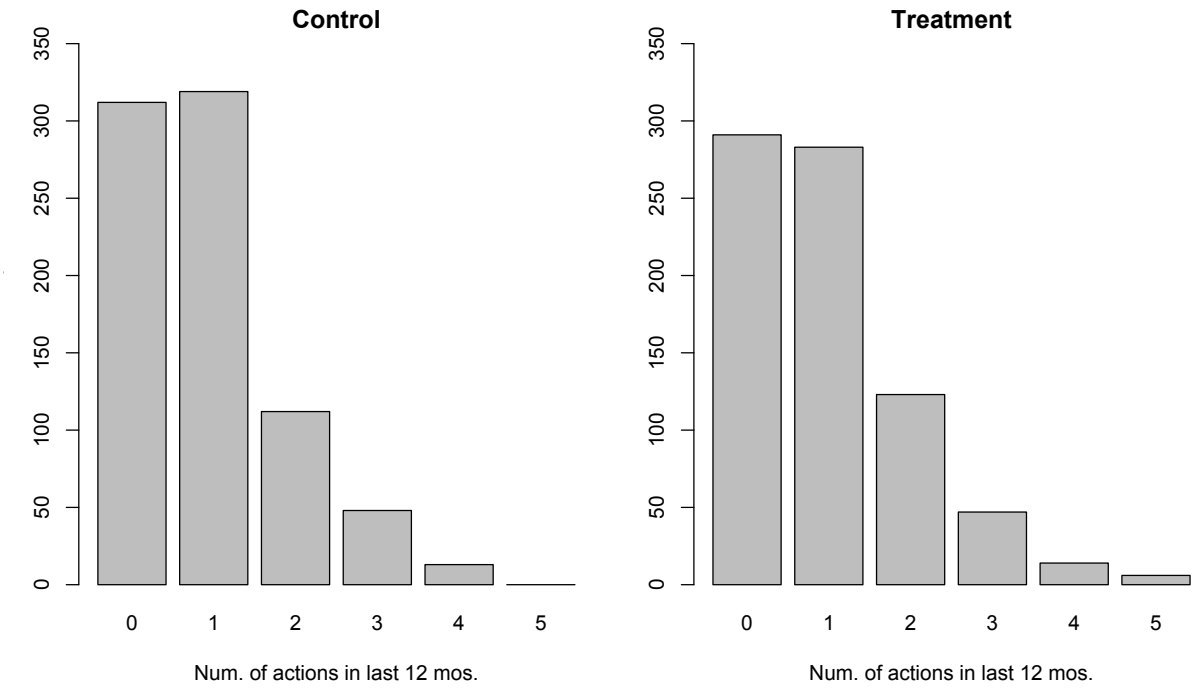
[4]At the moment, I do not have access to survey data where a corruption question was asked in both list experiment form and direct form, as advocated by Corstange (2009). Thus, for expository purposes, I compare list experiment and direct questions from separate surveys.

For this I use a list experiment asking a very similar question to the bribery experience question found in the GeoRating survey. In December 2012 an independent survey firm, the Levada Center, conducted 1600 face-to-face interviews with a nationally-representative sample of Russian citizens, including a series of survey experiments and list experiments on respondents' interactions and attitudes towards the police and the state in Russia. I use the *ictreg()* function in the *list* package in R and several other methods to conduct my statistical analysis of the list experiment data from my primary experiment of interest (Imai 2011; Blair and Imai 2012).

> **List Experiment:** Look at this card and try to remember which of the following actions you have taken at least once in the last 12 months. Don't say which actions, just say how many of the actions listed on this card you have taken at least once in the last 12 months.
>
> 1. Gone to local authorities to get some documents in order
> 2. Seen the head of your local administration on television
> 3. Called local authorities to get information about the services they offer
> 4. Complained to a friend about the work of your local administration
> 5. **Given a bribe to an official of your local administration in order to solve an everyday problem**

Respondents in the treatment group were given the sensitive item (item five, in bold) in addition to the four control items that were presented to all respondents.

**Figure 7.5:** Histograms of List Experiment Responses




To incorporate this list experiment data into my MRP estimates, I employ a novel reweighting procedure. Here, I generate estimates of sensitive question bias for *each cell* of the demographic-variable census matrix used in MRP's poststratification step. In effect, I reweight each cell's predicted probability (which is obtained from poststratification) according to the estimated bias that my list experiment tells me each cell is subject to. Cells are then aggregated into region-level estimates as before. The final effect of this reweighting procedure is not large, but does somewhat increase the estimated prevalence of petty corruption in every region. The amount that any given region's estimate is increase varies depending on the demographic profile of that region. The reweighted estimates are always correlated at $\rho > 0.9$ with the unadjusted MRP estimates, and substantive results are unchanged when

using either set of estimates. I use the adjusted (reweighted) estimates in this study, as they represent the highest-quality, most sophisticated evaluation of true experienced petty corruption.

### 7.3.3 Simulation MRP for Testing and Prediction

Existing applications of MRP generate point estimates of region-level mean characteristics. This leaves a substantial amount of information on the table, as the data and estimating procedure under the hood of MRP can quite easily be used to conduct inference for the purposes of testing policy changes and predicting hypothetical outcomes. In other words, one can estimate the effect of changes to policy, demographics, and other factors on the outcome at hand, or, similarly, generate predictions for interesting hypothetical cases. I introduce and explore these techniques here.

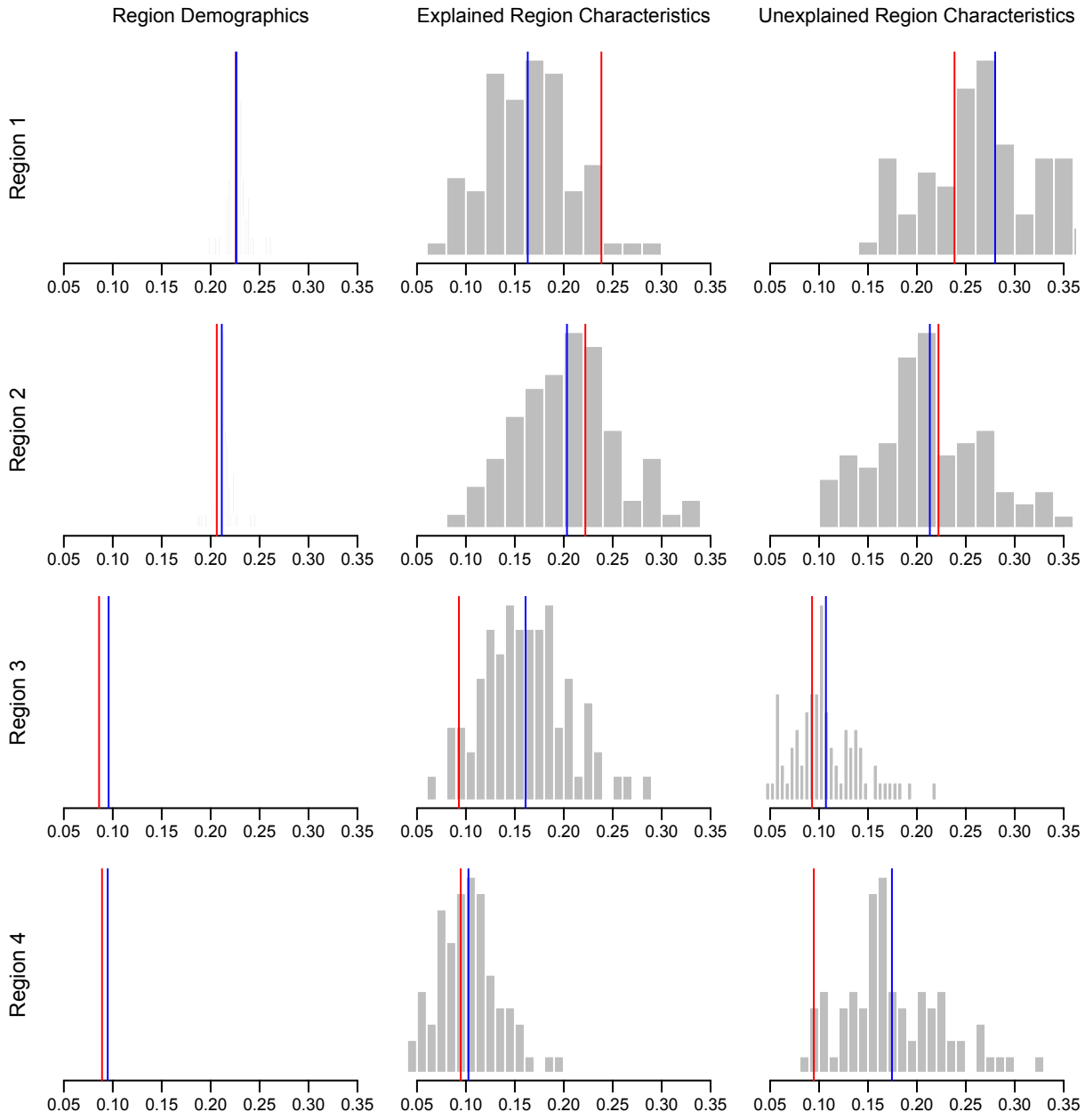
Aside from modeling decisions, there are three inputs to MRP that determine the values of the estimates it produces: survey demographic information, census demographic information, and second-level predictors. The demographic information contained in the survey is what ties the response variable to the census data, while the second-level (state-level) predictors reduce uncertainty in the second level of the multilevel model. Each of these inputs have an empirical distribution that we observe when we look at the data at hand.

Most simply, I suggest examining how each of the MRP inputs affects the estimates it produces. This allows the user to determine how much 'work' is being done by survey demographics, census variation, and second-level predictors. As a descriptive and diagnostic tool this can help with MRP model selection, with identifying problems in MRP estimation, and with descriptively assessing the magnitudes of differences between regions, for example.

It is quite easy to separate the effects of each input, as I propose: examine the inputs to the poststratification step of MRP by simulating that poststratification step using the empirical distributions of the inputs. In other words, holding survey and second-level predictor data constant, one can simulate the MRP estimate for Region 1 using the census data for Regions 2 through 50. The result is an empirical distribution of simulated, hypothetical MRP estimates for Region 1 as if it had the census demographics of all other regions in turn. One can then easily examine the shape and other characteristics of this empirical distribution to assess the effect of census data in determining the true estimate. One can also compare the true estimate to the distribution in order to make conclusions about how 'extreme' that region's census demographics are.

Figure 7.6 gives an example of the output of this procedure. Each row shows one of the 83 regions of Russia, labeled simply 1 through 4. The first column simulates the census demographics in the manner described above—this holds survey demographics and second-level predictors constant. A histogram of the results is shown, with the region's true estimate in red and the mean of the distribution in blue. The second column simulates the second-level predictors, holding census demographics constant. In other words, this shows what the estimate for Region 1 would be if it had the values of the second-level predictors of all other regions. Finally, the third column simulates the *random effects* of each region, showing how much 'work' in the estimate is being done by unexplained regional characteristics. One might wish to minimize the dispersion of this distribution, for example, or compare the distributions in the second column with those in the third to assess how well the second-level model is explaining outcomes.

**Figure 7.6:** Simulation MRP




Beyond such descriptive representations of these simulated MRP results, a number

of summary statistics can be calculated for these distributions for all regions in the data. This can aid with model selection or diagnosing outlier regions in the data that may be of interest.

It is one more small step to simulate these estimates using distributions of census demographics other than the empirical distributions at hand. The end result is akin to synthetic control methods. One can easily examine how changes to demographics or to the values of second-level predictors affect the estimates that MRP produces.

## 7.4 MRP on Firms

Multilevel regression and poststratification (MRP) is a rapidly growing, promising technique for generating high-quality estimates of, for example, state-level mean policy preferences. These estimates are produced by combining individual-level survey data with census information about the demographic makeup of each state's population. To my knowledge, MRP has previously only been applied to situations where the individuals are humans (or perhaps households) and the census is a typical national census of humans. In this section I apply MRP to a new universe: firms. As individual-level survey data I use surveys of firm directors, managers, and employees. I match the estimates of firms' responses, which I retrieve from a multilevel model, to a pseudo-census of the absolute frequencies of firm types in each Russian region. The cells in this census correspond to the estimates produced in the survey response model, and are built along four dimensions: firm size, firm age, ownership type, and sector.

This technique allows me to generate estimates of the regional prevalence of firm ex-

perienced corruption that are both more precise and more accurate than those that were possible before. The application of MRP to firms plays particularly well to the strengths of multilevel regression and poststratification. Since firm surveys are relatively scarce and, due to the difficulty in implementing firm surveys with a large sample size, multilevel modeling will automatically perform partial pooling as appropriate for each region and firm characteristic. This can substantially improve what we can learn from what are often unusual, unrepresentative, and skewed samples of firms in firm surveys.

The following figures show some characteristics of the firm pseudo-census that I use. Each figure shows the distribution of each firm characteristics in each region.

Figure 7.9 shows that the number of firms in each region in my pseudo-census closely matches the number of firms in the region as reported by the Russian state statistics service. So while my pseudo-census does not capture every firm existing in Russia, it is a very close approximation. I have no *a priori* reason to believe that there is any systematic bias in the firms entering into the pseudo-census that would negatively affect my MRP estimates.

I obtained this pseudo-census from a database, Ruslana, containing comprehensive data on all Russian firms. I filtered and exported the full set of firms, along with the four firm characteristics with which I match to the response model. The pseudo-census consists of 468,370 firms in all of Russia's regions. A secondary collection of firm data is underway, which I anticipate to include additional firm characteristics and a fuller sample. While the data in this pseudo-census is more recent than the survey data I use in my MRP procedure, I assume that the relative stability over time of the universe of firms existing in a country makes this a negligible issue.

In Figure 7.10 I show the region-level estimates of firm experienced corruption as generated by MRP. As my firm surveys do not include every region in Russia, I exclude here regions for which I have no survey data. While MRP is easily capable of generating estimates for these excluded regions, their estimates will be based purely on the census information, as their region random effect will be set to zero. These estimates are presented in an appendix.

## 7.5 Conclusion

Description and prediction are key elements of the scientific endeavor in addition to inference. In previous chapters, I have focused on the latter, using a plausibly exogenous measure of a political competition shock to show how authoritarian institutions can affect corruption levels. In this chapter, I have contributed to the former two tasks by applying a powerful new measurement technique—multilevel modeling and poststratification (MRP)—to corruption in Russia. This goes beyond existing measures of corruption that rely on perceptions, expert assessments, or surveys that cannot achieve precision at anything beyond highly aggregated levels. Taking MRP out of the realm of United States public opinion and into the realm of actual self-reported *experiences* in new countries and contexts helps us expand the ways that we can learn about corruption and about Russia.

In addition to providing a new and widely-applicable measure of subnational corruption levels in Russia, I have also taken steps to incrementally advance MRP methodology and application. I estimate the uncertainty of the levels of petty corruption in Russian regions and explore the extent to which demographics or model-based structural factors contribute to those estimates. I also present a potential technique for reweighting MRP estimates

to account for known bias. Finally, I show that MRP need not be limited to individuals. I implement MRP on a survey of *firms* in Russia to develop a measure of corruption as experienced by firms in Russian subnational units.

While some existing, publicly-available assessments of corruption such as the Transparency International Corruption Perceptions Index do incorporate public opinion surveys as one component measure, these products are necessarily quite limited. The addition of multilevel modeling and census data allows for representative estimates of *experienced* corruption for groups (including but not limited to subnational units) previously inaccessible with typical data. This can allow researchers and practitioners alike a superior view of how petty corruption afflicts countries at a very fine-grained level and with great flexibility in examining change over time.

**Figure 7.3:** MRP Estimates of Avg. Regional Experienced Petty Corruption in Russia (2011)

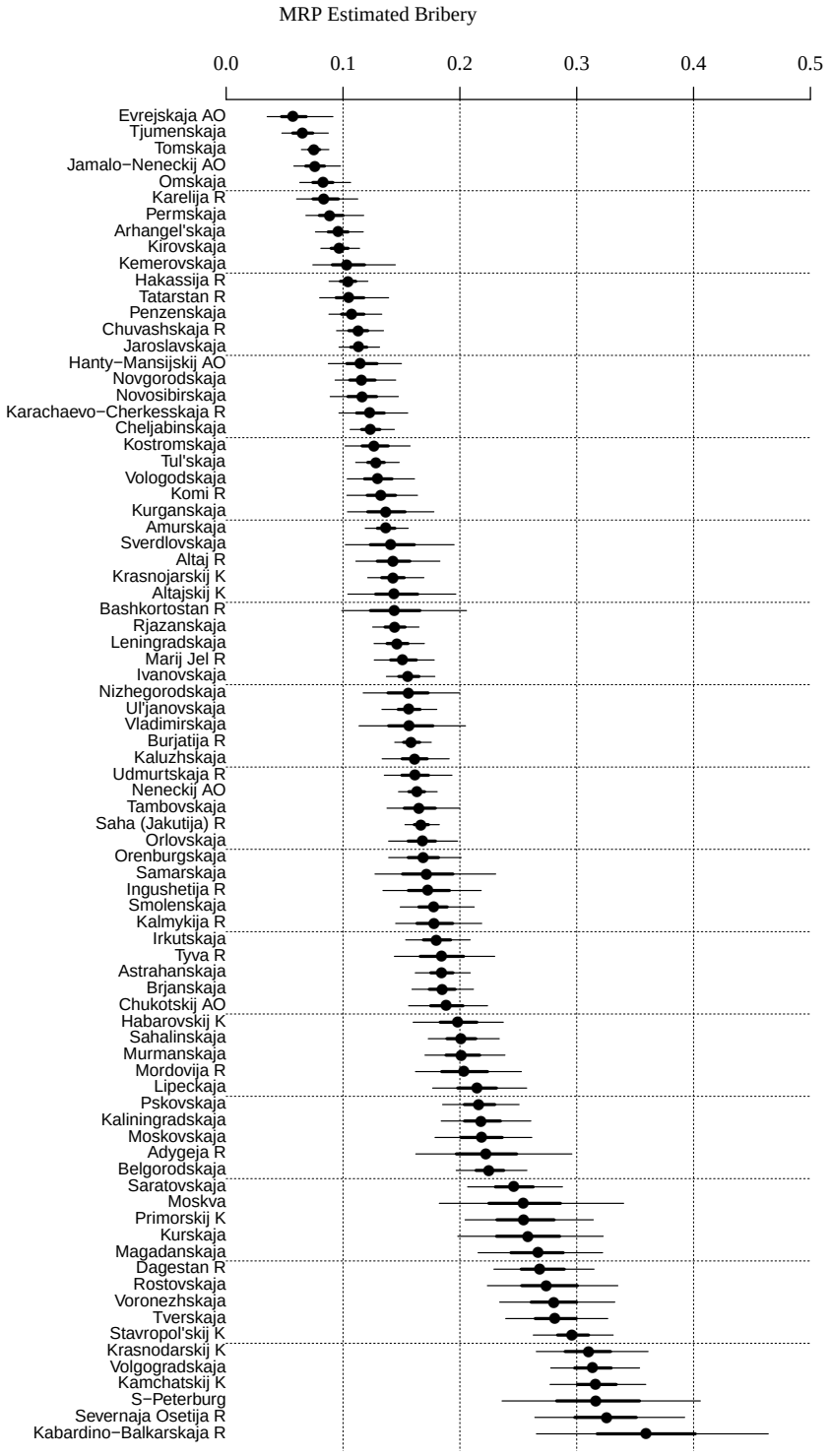


**Figure 7.7:** Firm Characteristics in Firm Census, by Region

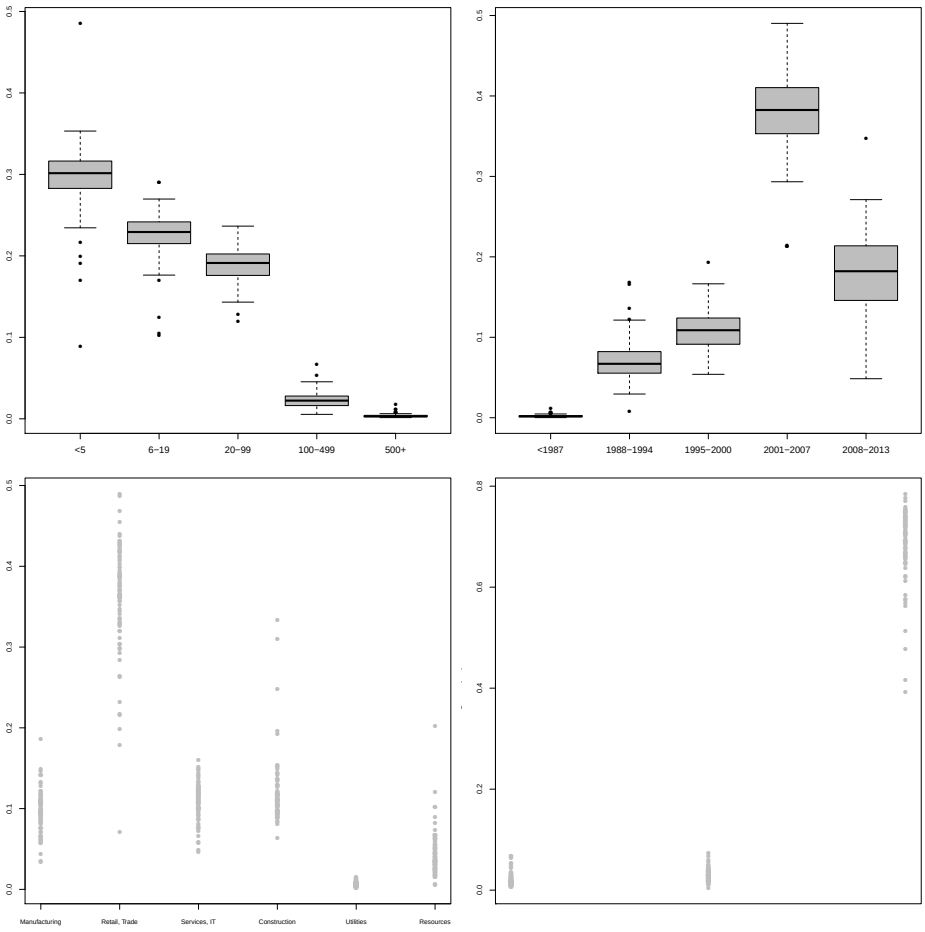


**Figure 7.8:** Firm Characteristics in Firm Census, by Region

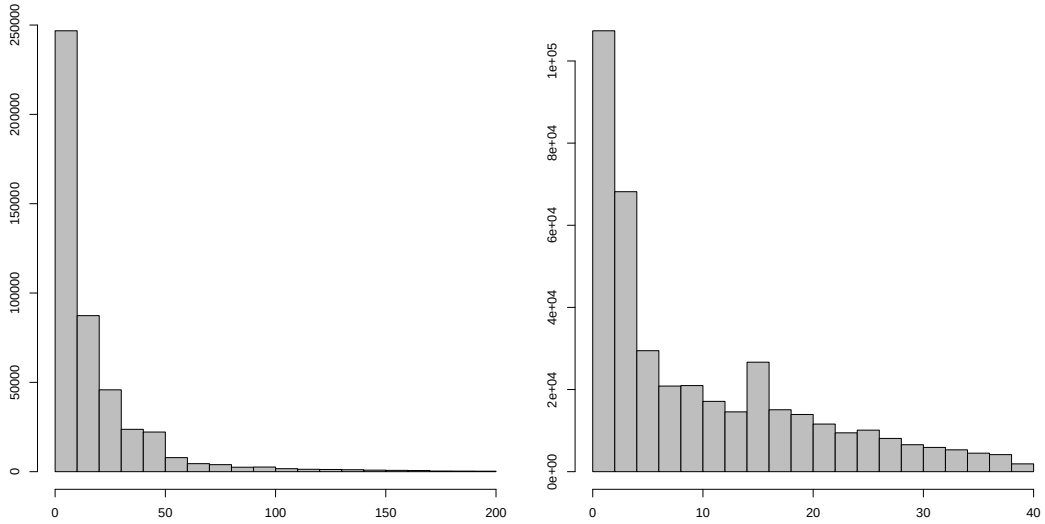



**Figure 7.9:** Number of Firms in Pseudo-Census and Rosstat, by Region

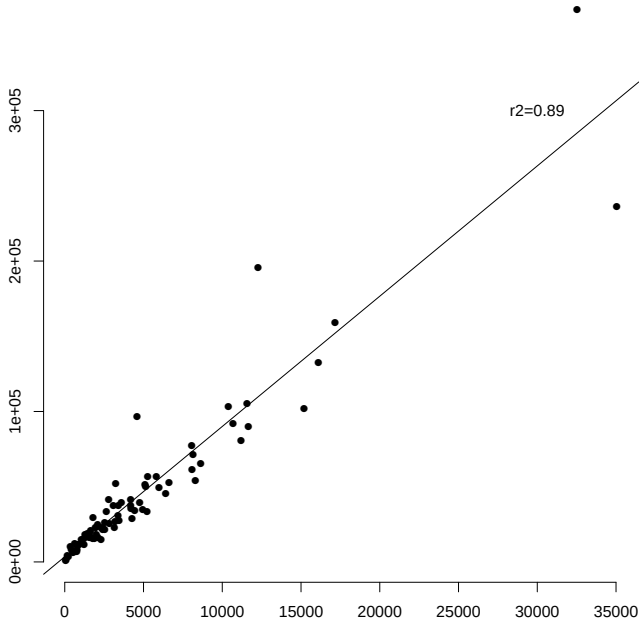
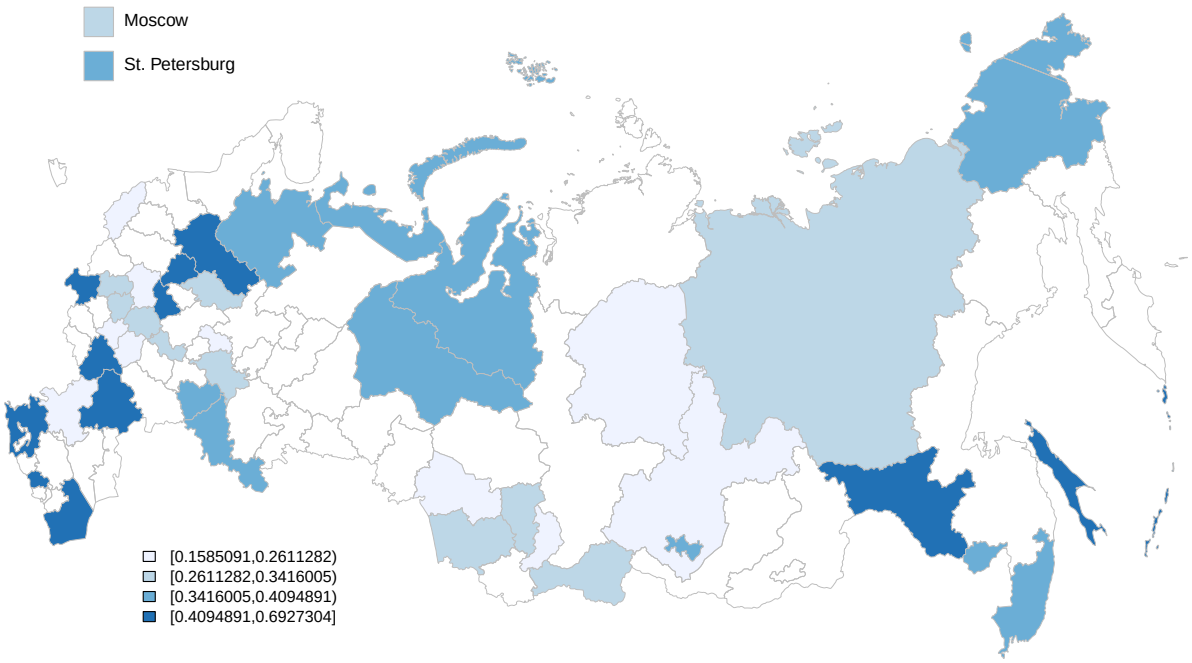


**Figure 7.10:** Map of Firm MRP Corruption Estimates (2012)



# 8 | Conclusion

> The fight for justice against corruption is never easy. It never has been and never will be. It exacts a toll on our self, our families, our friends, and especially our children. In the end, I believe, as in my case, the price we pay is well worth holding on to our dignity.
>
> —Frank Serpico

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In this dissertation, I show that, even in the absence of democratic institutions, political competitiveness can reduce corruption levels. Authoritarian institutions, such as the electoral calendar, drive variation in political competitiveness that shapes the behavior of regime principals and their agents at the regional level. Corruption serves as a useful signal to the autocrat about the performance and loyalty of his agents, and the agents (in Russia's case, governors) decrease bribery in an effort to please the autocrat and remain in power.

This research contributes to comparative and authoritarian politics by showing how institutions under autocracy shape principal-agent dynamics and the production of public goods. It also contributes to the study of corruption by improving measurement using micro-level experiential evidence and by showing that political competition works to decrease

corruption in non-democracies too, but—crucially—by a different mechanism: the risk of public protest and regime instability keeps governors in line during end-of-term periods.

I seek to contribute to the study of Russian politics by demonstrating that institutions matter even under President Putin's 'vertical of power'—the corruption experiences of the public vary widely across Russia for political reasons rooted in the regime itself. This goes against much prevailing wisdom, often supported by Putin's regime itself, which asserts that corruption is simply a matter of out-of-control bureaucrats who simply have yet to be reached by a still-developing regime. Rather, I show that corruption and variation in corruption levels from region to region are not purely mistakes. Corruption is an outcome that can be controlled to some extent—not only by democratic institutions, but also by authoritarian institutions.

While large, insightful literatures in many fields have helped us get a grasp on the ways that corruption functions across the world, the account that I have developed here brings news insights. These insights are derived from empirical evidence of a sort that is all-too-rarely used thus far in political science, from a distinct and consistent focus on the most *visible* and regime-threatening form of corruption—everyday petty bribery, and from a view of corruption as institutionally important, politically motivated, and deliberate. None of these approaches are consistently applied in most research, so by combining them I am able to build findings that are of relevance not only to research on corruption but also to authoritarian institutionalism more broadly.

## 8.1 Goals of the Dissertation and Empirical Findings

This dissertation set out with two goals: to explain vast, puzzling variation in the prevalence of corruption in authoritarian regimes and to show how political competition is a powerful force in autocracies—a force that shapes corruption, replacement of autocratic actors, and attitudes of the public towards their regime. By grappling with these questions, we can better understand how rulers, ruled publics, and rulers' agents interact—and how their interactions are shaped by institutions—using arrays of monitoring techniques, public goods provision, formal institutionalization, and ad hoc adjustment to political exigencies. The empirical evidence provided in Chapters 4 and 5 is consistent with my theory that describes these interactions and features, laid out in Chapter 2.

The fact that we observe high levels of corruption in some countries and contexts but we see low levels in others is not original. Indeed, a bevy of explanations tackle aspects of this variation. Nevertheless, it was an important goal of this dissertation to do better—gaps in these existing explanations left many questions as to the provenance of variation within and across authoritarian countries. By seeking out a broadly applicable, non-functionalist, empirically testable theory of why corruption varies so much under authoritarianism, this dissertation has worked to fill some of these gaps.

It is no less important to delve into sources of autocratic stability and the roles of institutions in autocratic regimes. While democratic institutions like strong voter accountability are lacking in autocracies, institutions like terms in office and semi-formal arrangements between autocrats and their agents must not be neglected. This dissertation has sought to elucidate the ways that political competition works—through end-of-term dynamics and

through performance signals like corruption—to help autocrats rule. As shown in Chapters 4 and 5, even modest changes to political competitiveness can have sizable effects on the amount of corruption experienced by individuals in their day-to-day, street-level experiences.

In several empirical chapters, I have built and analyzed a large data set that has allowed me to thoroughly test my theory. This data set combines a very large pool of survey data from across Russia's subnational units from 2001 to 2016 with macro-level statistics on political competitiveness at the region-year level. Analyzing this data using multilevel modeling, I have shown that corruption levels markedly decrease in regions and years when the governor's term in office is coming to an end. This finding is robust to a wide array of modeling choices, alternative measures, and inclusion of covariates.

In another chapter I dive deeper into this analysis, providing heterogenous effects that both advance our understanding on where and why corruption varies in countries such as Russia and powerfully confirm the theoretical underpinnings of my primary findings. Here, I bring in the insight that governors' concern about staying in office should be contingent on the resources available to them. I show that the availability of resources like natural resource rents allow governors to mitigate the risks that an impending end of term entail. I also show suggestive evidence that stronger political machines, perhaps fueled by grand corruption but less by petty corruption, also lessen governors' need to reduce corruption in the face of political competitiveness. This highlights the importance of studying conditional relationships in authoritarian regime structures. It also provides a powerful validity check on the mechanisms implied by my theory and main empirical tests.

In a third core empirical chapter, I expand on the assumptions of my theory—for example, that autocratic leaders *are* concerned about public discontent—and test them using

new survey data and a large bank of existing survey responses. I show that bribery is indeed painful and unwanted for Russians and that it can have real impacts on citizens' attitudes towards the regime and the state. Authoritarian regimes are wise to tamp down petty corruption at times where political competitiveness is high. To the extent that popularity, satisfaction, quiescence, and cooperation among the populace are fundamental desires for any type of government to have—but especially for authoritarian regimes where democratic outlets of opinion are absent—then the detrimental effects of corruption on these attitudes will be deeply felt by leaders and their agents alike.

A final chapter contributes to research on corruption by introducing a powerful new method of measuring petty bribery. I apply multilevel modeling and poststratification (MRP), heretofore used largely to assess state-level variation of public opinion in the United States, to survey-based reports of *experiences* with corruption. This allows for much more precise estimation of aggregate corruption prevalence at the subnational level in countries like Russia. Existing measures of corruption either rely on hard-to-verify expert perceptions or are unable to provide reasonable estimates at anything but the aggregate *national* level. I show how the MRP method combines survey data with census information to avoid these pitfalls. This chapter also incorporates uncertainty in MRP estimates and offers some simple advancements to weighting of MRP measures and diagnostics of what is occurring 'under the hood' in the MRP procedure.

Of course, corruption is a widespread phenomenon found not only in modern Russia. The task of understanding variation in corruption within countries has been tackled by scholars studying Brazil, Mexico, the United States, Ukraine, Indonesia, and many other diverse settings (e.g. Ferraz and Finan 2008; Olken 2005; Olken and Barron 2007). My theory

of political competitiveness and petty bribery is limited to non-democratic contexts. Here, traditional factors like voter accountability and free press are largely absent, yet the regime must rely on internal loyalty and performance in ways that are distinct from democracies. In democratic contexts, better-understood institutional features like bureaucratic professionalism and availability of information from a free press will dominate the fight against corruption. Here, political competition surely plays a crucial role, but that political competition will affect incentives quite directly, rather than indirectly through the autocrat's assessments of public sentiment and agent performance as in the autocracies considered in this study.

What characteristics might need to be found in order for my theory to be applicable? First, there should be some minimal amount of contestation of power or, at the very least, some plurality in the political realm. If there is no risk of losing office to a challenger, if there are no plausible challengers (due, for example, to hereditary, life-long appointment in combination with repression), or if repression is so overwhelming that political competition has been fully quashed, then the mechanism I propose—reducing corruption in order to reduce the risk of losing office—will have no purchase. It is difficult to ascertain whether countries like North Korea or Cuba which appear to be highly unitary and dictatorial feature the sorts of principal-agent dynamics and appointment scheme necessary for my theory to apply.

Second, in highly institutionalized environments, the underlying logic of my theory may work, but the effects of political competition are likely to be overwhelmed by hierarchy. For example, a strict one-party state like China[1], there is no real contestation of power,

[1]Though of course China does nominally have a multiparty system, for all intents and purposes the

but, more importantly, the system of rule is highly systematized—governed by credible institutions that bind and incentivize actors far beyond the extent that simple political competition can.

Finally, at the extremes of cases such as those discussed in Chapter 5, regime agents may have such an abundance of political resources that political competition is an insignificant concern. In such regimes, such as in Saudi Arabia where natural resource rents and resulting grand corruption dominate the political landscape, agents' jobs will still always be under threat, but it is possible that performance metrics other than public unrest over bribery levels crowd out any danger from political competition. Indeed, low-level bribery may not be a significant feature of such regimes at all, seeing as other, more lucrative sources of rents are available.

## 8.2 Implications and Future Research

A number of implications of the theory described and tested in this dissertation are worthy of discussion. I highlight implications for our understanding of (formal) institutions under autocracy, the role of the public in the very real threat of unrest for autocrats, and how corruption can function as a public good whose delivery must be optimized in order to reach actors' goals in an authoritarian regime.

While we have recently begun to understand some of the roles that institutions under authoritarianism—the legislatures and parties, for example, long dismissed as 'window-dressing'—our grasp on the full breadth and impact of these institutions is far from complete.

country is ruled by the Communist Party of China.

I build a theoretical and empirical apparatus that shows the effect of a formal rule-based institution, the electoral and appointment calendar, on actors' incentives under autocracy. This is a different sort of institution, one that is easily overlooked and yet that has real effects. It is much more easily manipulable than prominent institutions like a party or legislature. It appears that much of its power lies in the fact that it subtly (but unmistakably) shapes actors' incentives and behavior in ways that they do not notice, so those actors see no need to bend it to their will.

There is no doubt that the 'games' and intrigues played by an autocrat and his agents in complex authoritarian regimes are no simple matter. This dissertation shows that changes to their incentives, however, can be quite simple and quite powerful. Mere terms in office or other manifestations of political competitiveness shape how governors respond to the autocrat and how the autocrat and governors both respond to public sentiment. This suggests a role for policies that make small changes to incentives but that may result in real, even unintended, positive outcomes for governance. Even rules and norms that can easily be manipulated or abandoned by an unaccountable regime can have beneficial effects.

Another implication that I draw from this research is that public sentiment in authoritarian regimes is worthy of deep study. In both the theoretical and empirical realms, I have shown that the public's mood can be taken into account by nominally-uninterested regimes. This goes further than simple revolution-on-the-streets dynamics, and includes public goods and intra-regime relationships in a way that is not generally heretofore acknowledged.

This dissertation also serves as an example of what can be learned from careful study of petty corruption. Too often popular and academic attention is dominated by suitcases of cash and other similarly visible instances of grand corruption. Without a doubt these

are deserving of scrutiny. Nevertheless, petty bribery is deserving of much more scholarly focus than it has thus far received, for at least two reasons. First, as demonstrated in Chapter 6, publics in authoritarian countries can indeed react strongly and negatively to experiences with bribery. This has implications for attitudes and behaviors such as protest, but also for how we research perceived and experienced corruption of both petty and grand varieties. Second, petty corruption should gain stature as one important element of public goods provision. While roads and schools should continue to receive scholarly attention as public goods that leaders, autocratic or democratic, can provide and target to their supporters, petty corruption should not be overlooked as a highly dynamic, politically salient, and extremely visible form of public goods.

I extend the call to improve measurement of corruption and to take petty bribery seriously. Far from being a mere byproduct or symptom of authoritarian rule or low state capacity, corruption is a signal that autocrats can use to maintain power. Across the spectrum of authoritarian political systems, leaders use bribery calculatingly as a way of monitoring their political machines. And when studying a hard-to-measure phenomenon like corruption, macro-level and firm-level assessments will remain important, but the study of the corrosive presence of bribery in the everyday public sphere should not be neglected.

My findings also have implications for anti-corruption policy. They suggest that pushing governments to implement anti-corruption campaigns, build state capacity, or change cultures of governance may not be enough to fight graft effectively. Political competition can come in many forms, and is effective at reducing corruption even when democratic accountability mechanisms are absent. Moreover, authoritarian institutions should be taken seriously as a force driving corruption levels. While anti-corruption campaigns, changes to

cultures of corruption, free flows of information, or external inducements remain very important, this dissertation suggests that policy makers should be cognizant of the many forms that political competition can take in non-democratic countries and the beneficial effects that can result from increased competitiveness.

Future research should address beliefs about and experiences with corruption from the perspective of government officials themselves. This will help to complete the picture of the roles that corruption plays in politicizing the state, maintaining regime stability, and driving public perceptions of politics.

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# 10 | Appendix

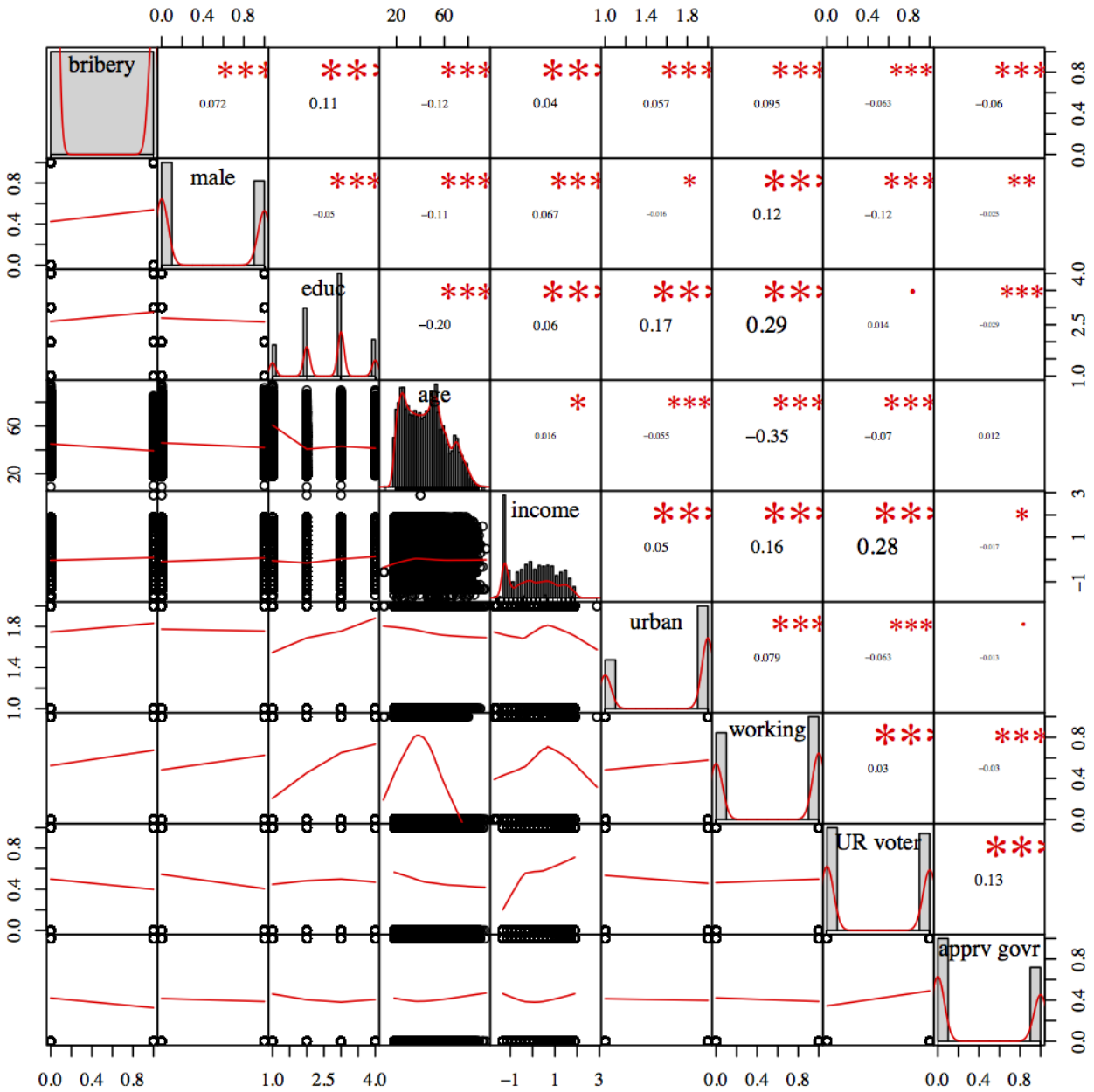
## 10.1 Survey Data Used

The surveys used in this dissertation, described in Table A1 , were gathered from a variety of sources: ICSID databases at the Higher School of Economics in Moscow, the Life in Transition Survey website, the Higher School of Economics "Unified Archive of Economic and Sociological Data," and directly from the Levada Center.

**Table A1 :** Summary of Survey Data

| Year | Survey | Num Obs | Num Regions |
|---|---|---|---|
| 2001 | INDEM | 2,017 | 15 |
| 2002 | FOM Penta | 1,933 | 46 |
| 2002 | INDEM | 5,666 | 40 |
| 2003 | FOM GeoRating | 31,325 | 63 |
| 2005 | Levada Courier | 1,651 | 45 |
| 2005 | INDEM | 3,100 | 29 |
| 2006 | Levada Courier | 1,570 | 46 |
| 2006 | Life in Transition | 1,000 | 32 |
| 2007 | Levada Courier | 1,601 | 46 |
| 2008 | FOM GeoRating | 32,289 | 65 |
| 2010 | FOM GeoRating | 32,870 | 68 |
| 2010 | Life in Transition | 1,391 | 37 |
| 2011 | FOM GeoRating | 52,670 | 74 |
| 2012 | Levada Courier | 1,601 | 45 |
| 2013 | Levada Courier | 1,601 | 45 |
| 2016 | Levada Courier | 1,484 | 47 |
| | | 181,659 | |

**Figure A1:** Correlation Matrix of Individual-level Variables



## 10.2 Regional Data Used

The core of the region-year level data, described briefly below in Table A2 , was collected from the central regional database of the International Center for the Study of Institutions and Development (ICSID) at the Higher School of Economics in Moscow, which in turn is formed from a variety of statistical databases, most prominently Russian government statistical service, Rosstat. The scheduled end of term variable is from the ICSID database with additions for more recent years by the author. The Pct Russian variable was updated by the author from official Russian census data.

**Table A2 :** Descriptive Statistics: Region-Year Variables

| **Variable** | **N** | **Min.** | **Max.** | **Mean** | **Median** | **#NA** |
|---|---|---|---|---|---|---|
| Sched End of Term | 1424 | 0.00 | 1.00 | 0.26 | 0.00 | 92 |
| Petrov Competitiveness | 1417 | -2.39 | 3.11 | 0.00 | -0.03 | 99 |
| Log GRP | 1479 | 6.38 | 16.27 | 11.88 | 11.96 | 37 |
| Pct Russian | 1516 | 0.01 | 0.97 | 0.74 | 0.85 | 0 |
| Log Population | 1516 | 9.70 | 16.30 | 13.78 | 13.97 | 0 |
| Republic/City/AO | 1504 | 0.00 | 1.00 | 0.31 | 0.00 | 12 |
| Press Freedom | 1417 | 1.00 | 5.00 | 2.76 | 3.00 | 99 |
| UR Vote in National Elects | 1239 | -1.86 | 2.97 | -0.01 | -0.30 | 277 |
| Gov'r Margin Victory | 1222 | 0.20 | 4804.50 | 79.50 | 38.00 | 294 |
| Gov'r Yrs Tenure | 1034 | 0.00 | 20.00 | 6.83 | 6.00 | 482 |
| UR Vote in Regional Legis | 830 | 17.66 | 90.40 | 49.59 | 50.01 | 686 |
| Nat Resources | 1504 | 0.00 | 78.60 | 9.63 | 1.70 | 12 |
| Gov't Size | 928 | 1.00 | 101.00 | 33.56 | 33.00 | 588 |
| Official Turnover | 839 | 0.00 | 18.00 | 0.42 | 0.28 | 677 |
| Machine Organization | 1441 | -1.89 | 3.58 | 0.02 | -0.34 | 75 |

## 10.3 Additional Analyses

**Table A3 :** Political Competition and Experienced Corruption

| | Govt Handles Corrup Well | Corrup of Authorities | Corrup of Law Enf | Regional Satisfaction |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Male | −0.001 | 0.065*** | 0.060*** | −0.022*** |
| | (0.002) | (0.003) | (0.003) | (0.004) |
| Education | −0.005*** | 0.030*** | 0.019*** | −0.032*** |
| | (0.001) | (0.002) | (0.002) | (0.002) |
| Age | −0.001 | 0.009*** | 0.0004 | 0.001 |
| | (0.001) | (0.002) | (0.001) | (0.002) |
| Income | 0.003 | 0.018*** | 0.018*** | 0.045*** |
| | (0.002) | (0.003) | (0.002) | (0.003) |
| Urban/Rural | −0.014*** | 0.032*** | 0.025*** | −0.006 |
| | (0.002) | (0.003) | (0.003) | (0.004) |
| Bribery Experience | −0.010*** | 0.079*** | 0.065*** | −0.098*** |
| | (0.003) | (0.004) | (0.004) | (0.005) |
| Constant | 0.107*** | 0.052** | 0.023 | 0.445*** |
| | (0.033) | (0.020) | (0.017) | (0.040) |
| Number of regions | 74 | 74 | 74 | 74 |
| Number of years | 2 | 2 | 2 | 2 |
| N | 68,041 | 68,041 | 68,041 | 60,237 |
| Log Likelihood | −13,022.300 | −41,909.860 | −31,010.620 | −45,323.470 |
| BIC | 26,155.880 | 83,931.010 | 62,132.530 | 90,757.010 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.

**Table A4 :** Political Competition and Experienced Corruption

| | DV: Bribery Experience | |
|---|---|---|
| | (1) | (2) |
| Male | 0.048*** | 0.024*** |
| | (0.002) | (0.004) |
| Education | 0.024*** | 0.036*** |
| | (0.001) | (0.002) |
| Age | −0.038*** | −0.057*** |
| | (0.001) | (0.002) |
| Income | 0.018*** | 0.041*** |
| | (0.002) | (0.003) |
| Urban/Rural | 0.025*** | 0.025*** |
| | (0.003) | (0.004) |
| Survey: INDEM | | 0.018 |
| | | (0.012) |
| Survey: Courier | 0.069*** | 0.095*** |
| | (0.013) | (0.019) |
| Survey: LiTS | 0.098*** | 0.236*** |
| | (0.009) | (0.031) |
| Sched End of Term | −0.008** | 0.023*** |
| | (0.004) | (0.006) |
| Constant | 0.041* | 0.037 |
| | (0.022) | (0.037) |
| N | 96,318 | 46,946 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

**Table A5 :** Political Competition and Experienced Corruption

| | DV: Bribery Experience | | |
|---|---|---|---|
| | (1) | (2) | (3) |
| Male | 0.045*** | 0.045*** | 0.043*** |
| | (0.002) | (0.002) | (0.002) |
| Education | 0.034*** | 0.034*** | 0.033*** |
| | (0.001) | (0.001) | (0.001) |
| Age | −0.039*** | −0.039*** | −0.038*** |
| | (0.001) | (0.001) | (0.001) |
| Urban/Rural | 0.027*** | 0.027*** | 0.027*** |
| | (0.002) | (0.002) | (0.002) |
| Survey: INDEM | 0.005 | 0.005 | 0.002 |
| | (0.009) | (0.009) | (0.009) |
| Survey: Courier | 0.077*** | 0.077*** | 0.069*** |
| | (0.009) | (0.009) | (0.009) |
| Survey: LiTS | 0.116*** | 0.116*** | 0.109*** |
| | (0.009) | (0.009) | (0.009) |
| Sched End of Term | −0.005** | −0.005 | |
| | (0.002) | (0.006) | |
| Federal Election Yr | −0.048 | −0.048 | −0.045 |
| | (0.050) | (0.050) | (0.048) |
| Sched End Term X Fed Election | | −0.0001 | |
| | | (0.007) | |
| Constant | 0.068* | 0.068* | 0.070** |
| | (0.036) | (0.036) | (0.035) |
| N | 170,861 | 170,861 | 133,861 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

**Table A6 :** Political Competition and Experienced Corruption

| | DV: Bribery Experience | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Male | 0.040*** | 0.039*** | 0.040*** | 0.040*** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Education | 0.028*** | 0.028*** | 0.028*** | 0.028*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Age | −0.044*** | −0.044*** | −0.044*** | −0.044*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Income | 0.024*** | 0.025*** | 0.024*** | 0.024*** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Urban/Rural | 0.027*** | 0.025*** | 0.026*** | 0.026*** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Sched End of Term | −0.005* | −0.003 | −0.005* | −0.005* |
| | (0.003) | (0.003) | (0.003) | (0.003) |
| Region Mean: Male | −1.926** | | | |
| | (0.828) | | | |
| Region Mean: Education | 0.317*** | | | |
| | (0.050) | | | |
| Region Mean: Age | 0.031 | | | |
| | (0.088) | | | |
| Region Mean: Income | −0.028 | | | |
| | (0.022) | | | |
| Region Mean: Urban | −0.175*** | | | |
| | (0.050) | | | |
| Regn-Yr Mean: Male | | 0.458*** | | |
| | | (0.069) | | |
| Regn-Yr Mean: Education | | 0.019 | | |
| | | (0.012) | | |
| Regn-Yr Mean: Age | | −0.010 | | |
| | | (0.018) | | |
| Regn-Yr Mean: Income | | −0.020*** | | |
| | | (0.005) | | |
| Regn-Yr Mean: Urban | | 0.039*** | | |
| | | (0.014) | | |
| Region Mean: Sched End of Term | | | 0.008 | |
| | | | (0.033) | |
| Constant | 0.273 | −0.179*** | 0.101*** | 0.102*** |
| | (0.394) | (0.047) | (0.024) | (0.023) |
| N | 143,264 | 143,264 | 143,264 | 143,264 |

*p < .1; **p < .05; ***p < .01
Standard errors shown in parentheses; all models are linear non-nested multilevel.

**Table A7 :** Political Competition and Experienced Corruption

| | DV: Bribery Experience | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Male | 0.040*** | 0.048*** | 0.039*** | 0.048*** | 0.048*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Education | 0.028*** | 0.023*** | 0.028*** | 0.023*** | 0.023*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Age | −0.044*** | −0.038*** | −0.044*** | −0.038*** | −0.038*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Income | 0.024*** | 0.017*** | 0.025*** | 0.017*** | 0.016*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Urban/Rural | 0.027*** | 0.024*** | 0.025*** | 0.024*** | 0.024*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Sched End of Term | −0.005* | −0.012*** | −0.003 | −0.009*** | −0.012*** |
| | (0.003) | (0.003) | (0.003) | (0.003) | (0.003) |
| Log GRP | −0.005 | | −0.016* | | 0.013 |
| | (0.009) | | (0.008) | | (0.011) |
| Pct Russian | −0.066 | | −0.083* | | −0.038 |
| | (0.048) | | (0.048) | | (0.052) |
| Log Population | 0.024* | | 0.024** | | 0.004 |
| | (0.012) | | (0.012) | | (0.015) |
| Republic/city/AO | −0.021 | | −0.027 | | −0.013 |
| | (0.018) | | (0.022) | | (0.020) |
| Region Mean: Male | −1.425* | −1.359 | | | −1.377 |
| | (0.776) | (0.855) | | | (0.853) |
| Region Mean: Education | 0.321*** | 0.375*** | | | 0.388*** |
| | (0.046) | (0.050) | | | (0.050) |
| Region Mean: Age | 0.105 | 0.039 | | | 0.093 |
| | (0.097) | (0.088) | | | (0.104) |
| Region Mean: Income | 0.001 | −0.084*** | | | −0.071** |
| | (0.025) | (0.024) | | | (0.030) |
| Region Mean: Urban | −0.222*** | −0.152*** | | | −0.241*** |
| | (0.054) | (0.050) | | | (0.059) |
| Regn-Yr Mean: Male | | | 0.443*** | 0.507*** | |
| | | | (0.069) | (0.081) | |
| Regn-Yr Mean: Education | | | 0.020* | −0.014 | |
| | | | (0.012) | (0.015) | |
| Regn-Yr Mean: Age | | | −0.008 | 0.023 | |
| | | | (0.018) | (0.023) | |
| Regn-Yr Mean: Income | | | −0.019*** | −0.010* | |
| | | | (0.005) | (0.005) | |
| Regn-Yr Mean: Urban | | | 0.038*** | 0.012 | |
| | | | (0.014) | (0.017) | |
| Region Mean: Sched End of Term | −0.143 | −0.160 | −0.252** | −0.111** | −0.310 |
| | (0.391) | (0.411) | (0.128) | (0.056) | (0.430) |
| N | 142,558 | 106,816 | 142,558 | 106,816 | 106,110 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.

**Table A8 :** Political Competition and Experienced Corruption

| | DV: Bribery Experience | | | |
|---|---|---|---|---|
| | (1) | (2) | (3) | (4) |
| Male | 0.040*** | 0.039*** | 0.040*** | 0.040*** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Education | 0.028*** | 0.028*** | 0.028*** | 0.028*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Age | −0.044*** | −0.044*** | −0.044*** | −0.044*** |
| | (0.001) | (0.001) | (0.001) | (0.001) |
| Income | 0.024*** | 0.025*** | 0.023*** | 0.024*** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Urban/Rural | 0.027*** | 0.025*** | 0.027*** | 0.027*** |
| | (0.002) | (0.002) | (0.002) | (0.002) |
| Petrov Democracy | −0.014*** | −0.020*** | −0.015*** | −0.009** |
| | (0.003) | (0.004) | (0.003) | (0.003) |
| Log GRP | | | 0.002 | |
| | | | (0.009) | |
| Pct Russian | | | −0.056 | |
| | | | (0.049) | |
| Log Population | | | 0.021* | |
| | | | (0.012) | |
| Republic/city/AO | | | −0.028 | |
| | | | (0.019) | |
| Sched End of Term | | | | 0.004 |
| | | | | (0.003) |
| Region Mean: Male | −2.002** | | −1.644** | −2.056** |
| | (0.845) | | (0.791) | (0.843) |
| Region Mean: Education | 0.297*** | | 0.314*** | 0.301*** |
| | (0.051) | | (0.047) | (0.051) |
| Region Mean: Age | 0.013 | | 0.048 | 0.012 |
| | (0.090) | | (0.099) | (0.090) |
| Region Mean: Income | −0.023 | | −0.010 | −0.026 |
| | (0.022) | | (0.025) | (0.022) |
| Region Mean: Urban | −0.148*** | | −0.193*** | −0.149*** |
| | (0.053) | | (0.055) | (0.053) |
| Regn-Yr Mean: Male | | 0.509*** | | |
| | | (0.069) | | |
| Regn-Yr Mean: Education | | 0.012 | | |
| | | (0.012) | | |
| Regn-Yr Mean: Age | | −0.009 | | |
| | | (0.018) | | |
| Regn-Yr Mean: Income | | −0.020*** | | |
| | | (0.005) | | |
| Regn-Yr Mean: Urban | | 0.043*** | | |
| | | (0.014) | | |
| Petrov Democracy X Sched End Term | | | | −0.020*** |
| | | | | (0.003) |
| Constant | 0.344 | −0.185*** | −0.098 | 0.358 |
| | (0.402) | (0.047) | (0.398) | (0.401) |
| N | 143,254 | 143,254 | 142,558 | 143,254 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.

**Table A9 :** Political Competition and Experienced Corruption

| | Bribe Experience Non-Response | | | | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| Male | 0.002* | 0.002* | 0.002* | 0.002* | 0.002* | 0.002* |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Education | −0.001 | −0.001 | −0.001 | −0.001 | −0.001 | −0.001 |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Age | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 | 0.001 |
| | (0.0005) | (0.0005) | (0.001) | (0.0005) | (0.0005) | (0.0005) |
| Income | 0.004*** | 0.004*** | 0.004*** | 0.004*** | 0.004*** | 0.004*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Urban/Rural | −0.002** | −0.002** | −0.002** | −0.002** | −0.002** | −0.002** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Survey: Courier | 0.003 | 0.003 | 0.001 | 0.003 | 0.003 | 0.003 |
| | (0.005) | (0.005) | (0.005) | (0.005) | (0.005) | (0.005) |
| Sched End of Term | 0.009*** | | | | | |
| | (0.001) | | | | | |
| Petrov Democracy | | −0.010*** | | | | |
| | | (0.002) | | | | |
| Log GRP | | | −0.012*** | | | |
| | | | (0.002) | | | |
| Pct Russian | | | | −0.004 | | |
| | | | | (0.004) | | |
| Log Population | | | | | 0.011 | |
| | | | | | (0.014) | |
| Pct Urban | | | | | | 0.014 |
| | | | | | | (0.024) |
| Constant | 0.039*** | 0.042*** | 0.186*** | 0.099* | 0.032** | 0.031* |
| | (0.006) | (0.006) | (0.028) | (0.052) | (0.013) | (0.018) |
| N | 130,669 | 130,669 | 129,977 | 130,669 | 130,669 | 130,669 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.

**Table A10 :** Political Competition and Experienced Corruption

| | Bribe Experience Non-Response to Yes | | | | |
|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) |
| Male | 0.040*** | 0.039*** | 0.040*** | 0.040*** | 0.040*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Education | 0.026*** | 0.026*** | 0.026*** | 0.026*** | 0.026*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Age | −0.043*** | −0.043*** | −0.043*** | −0.043*** | −0.043*** |
| | (0.001) | (0.001) | (0.001) | (0.001) | (0.001) |
| Income | 0.026*** | 0.025*** | 0.026*** | 0.026*** | 0.026*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Urban/Rural | 0.019*** | 0.020*** | 0.019*** | 0.019*** | 0.020*** |
| | (0.002) | (0.002) | (0.002) | (0.002) | (0.002) |
| Survey: INDEM | 0.169*** | | | | |
| | (0.010) | | | | |
| Survey: Courier | 0.224*** | | | | |
| | (0.009) | | | | |
| Survey: LiTS | 0.194*** | | | | |
| | (0.009) | | | | |
| Sched End of Term | 0.003 | 0.002 | | | 0.009*** |
| | (0.003) | (0.003) | | | (0.003) |
| Log GRP | | −0.019* | | −0.008 | |
| | | (0.010) | | (0.009) | |
| Pct Russian | | −0.068 | | −0.081 | |
| | | (0.057) | | (0.053) | |
| Log Population | | 0.025* | | 0.021 | |
| | | (0.013) | | (0.013) | |
| Republic/city/AO | | −0.026 | | −0.040 | |
| | | (0.025) | | (0.025) | |
| Pct Urban | | −0.041 | | | |
| | | (0.063) | | | |
| Petrov Democracy X Sched End Term | | | | | −0.015*** |
| | | | | | (0.003) |
| Petrov Democracy | | | −0.023*** | −0.022*** | −0.019*** |
| | | | (0.004) | (0.004) | (0.004) |
| Constant | 0.013 | 0.109 | 0.165*** | 0.044 | 0.164*** |
| | (0.030) | (0.137) | (0.059) | (0.146) | (0.059) |
| N | 149,109 | 148,396 | 149,099 | 148,396 | 149,099 |

*p < .1; **p < .05; ***p < .01

Standard errors shown in parentheses; all models are linear non-nested multilevel.